BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, DECEMBER 14th, 1935

TREATMENT OF MAXILLARY SINUS SUPPURATION*

BY

JOHN F. O'MALLEY, M.Ch., F.R.C.S.

CONSULTING SURGEON, EAR, NOSE, AND THROAT DEPARTMENT, UNIVERSITY COLLEGE HOSPITAL, HOSPITAL OF ST. JOHN AND ST. ELIZABETH, ETC.

If the ideal aim of treatment is the restoration of function, then this should be best achieved by removing all the factors which we believe to be concerned in causing its impairment or loss. In my opinion there are certain principles peculiarly its own which underlie the health of a sinus, its maintenance in this condition, its spontaneous return to normal from temporary inflammatory involvement, and the attainment of this return to function even in the face of gross disease.

I am deliberately departing from the more usual method followed in discussions of this kind, because I propose to present the subject more or less as we encounter cases clinically. In doing this, I will attempt to answer certain fundamental questions on which the prospect of successful treatment depends, in the hope that such a plan will prove to be the most profitable. The questions are: (1) What precedes sinus suppuration? (2) Why is not maxillary sinus suppuration more universal? (3) Why does it occur? (4) How can it be got rid of? (5) What factors can we count on to promote a cure?

The views advanced here are largely based upon conclusions drawn from a long period of personal investigation in a series of various types of maxillary sinus infections, in which the influence of air current pressure phases or the ventilation dynamics of the nose and sinuses were studied and graphically demonstrated in health and disease. Nasal accessory sinuses function under the physical laws which govern air movements generally in nature, and should always be thought of in terms of "ventilation" rather than in terms of "fluid gravity drainage," whether these cavities may contain excessive secretion for the time being or not. It should be remembered that, in contrast to what obtains in an abscess of a solid organ, the purulent fluid, though unable to escape from the air space, is still outside the body tissues.

My aim, therefore, in this discussion will be to concentrate attention chiefly on this fundamental aspect of our subject, and apply its lesson to the surgical methods of treatment which should follow as a natural corollary.

Mechanism of Sinus Function

The logical discussion of these questions and their bearing upon the treatment of antral suppuration calls for a brief preliminary review of our present knowledge of how the health of this air space is maintained, and of the factors concerned with disease and recovery.

Apart from the action of glandular secretions the physical side of the physiological function of an antrum depends upon two main factors of paramount importance, which are concerned with the preparation and purification of the inspired air and the transport of debris from the sinuses and the nose. These are: (1) ciliary activity; and (2) air pressure variation currents, which synchronize in phase with those of the nasal passages in each respiratory cycle. These variation currents will later be termed "ventilation." Both are independent of gravity, but in my opinion they are interdependent, as air currents provide the stimuli and need for ciliary activity. Both are capable of increased activity to meet special needs, but air pressure variation currents are the more mobile and expansive. By virtue of the force they can exert when, in disturbed conditions of ventilation, increased respiratory effort is made against resistance, air pressure variation currents constitute a potent factor in causing the peculiar oedematous changes of the soft tissues associated with inflammatory processes in the nose and sinuses—changes which, so far as I can see, are not explicable by any other line of reasoning.

In the absence of infection, and so long as ciliary activity and ventilation are efficiently maintained, the sinus remains healthy because it is provided with the same defensive air preparation and purification mechanism as the nose, though it is perhaps of a less robust type. It remains healthy indefinitely in those persons who never get a head cold, and they are many.

Capacity for Recovery

During quiet breathing in health, negative and positive ventilation air pressures equal the very small force of 6 and 4 mm. of water respectively, but during forced respiration they may reach 800 mm. or more, and this can be exerted to overcome increased resistance to nasal and sinus air currents produced by inflammatory engorgement. If this effort succeeds in restoring both pressure phases, alternating regularly in each respiratory cycle, the sinus becomes normal on the subsidence of the vascular engorgement. If it fails to do so, sinus suppuration ensues and remains until ventilation is re-established.

The possibility of regeneration of ciliated epithelium was demonstrated fifty years ago by Schäfer on the trachea of a rabbit, and many recent research workers, notably McGregor, Knowlton, Proetz, Coates, Gorham, and others have proved that what is true of the characteristics of cilia in animals is also true for man. An acute inflammation may destroy the epithelium and cause its exfoliation as pus, to be followed by regeneration, which takes about four weeks. This happens more or less in any acute inflammatory coryza.

Evidence of regeneration of a complete antrum lining with all the functioning elements is now beyond question. When McGregor informed me of his momentous discovery in 1930 it seemed to me incomprehensible then, as it was to him previously, because we were both of the opinion

* Read in opening a discussion in the Section of Oto-Rhino-Laryngology at the Annual Meeting of the British Medical Association, Melbourne, 1935.

that the removed antral lining was replaced by simple scar tissue without glandular elements or ciliated epithelium. His later work, confirmed by that of several contemporary investigators, has finally established his earlier claims. This regeneration is usually complete in from six to nine months.

Proetz has made the valuable and noteworthy discovery of active cilia in a grossly diseased and suppurating sinus. Whether the cilia were destroyed by the primary acute inflammatory invasion and regenerated in the cold or chronic stage or not is immaterial, because the fact of importance is the proof of their presence under such conditions, still active and ready to function the moment that the sinus is placed in free air current continuity with the nose.

Nature of Infection

During the investigation referred to above I came to the conclusion, as the result of certain observations, that every invasion of the upper airway which produces symptoms capable of being diagnosed as an "acute cold in the head" shows simultaneous reactions in the nose and sinuses. All of these pass through the usual stages of vascular engorgement and secretory activity, such as are commonly described as being characteristic of acute catarrh or "inflammation" of a mucous membrane, and, further, either subsidence is usually coterminous. We have, in fact, with every acute coryza a sinusitis as truly as we have a rhinitis. During the active inflammatory process the ventilation of all the air spaces is impaired, but on the subsidence of the infective reactions it is again restored by ordinary respiratory effort. This knowledge supplies the answer to the second question on my list—"Why is not maxillary sinus suppuration more universal?"

Failure of the sinus to recover its ventilation simultaneously with that of the nose implies the presence at the ostium of a physical barrier—either vascular or structural, or both—which prevents the movements of air currents through it, and the same obstructive factor is also the chief one concerned in restraining ciliary output. With the subsidence of the general and pyrexial symptoms the nose clears up and ventilates, leaving the sinus as an "unresolved" portion of the infected airway. The inflammatory reactions have simultaneously subsided from their active peak in the sinus as well, and the condition has now become less acute, this being undoubtedly the commonest stage at which it comes under our observation for treatment.

The factors which influence the principles underlying treatment will obviously control procedure, which will range from management on constitutional or local lines up to a radical operation. Several questions have to be asked. Is the infection of dental or intranasal origin? Is it simple catarrhal or acute influenzal? Is the stage acute, chronic, or complicated by oedema, or polypi, or multiple sinusitis? (The latter will not be discussed, and is mentioned only for the purpose of emphasizing the importance of recognizing its presence, as failure to do so has frequently been responsible for disappointing results in otherwise well-planned and executed antral operations.) Suppuration entering from the upper nose may cause a persistent maxillary pyo-sinus, with apparent continuance of disease, although the surgical opening can be demonstrated as ventilating the cavity perfectly.

Dental Infections

These are usually definite and arresting in their onset. Suppuration appearing rapidly in the nose (say, inside twenty-four hours) following the extraction of a tooth has invariably for its source a root abscess which has burst into the sinus as a result of the manipulation. Without antecedent intranasal symptoms no sinus will produce pus in such a short space of time, and its rapid appearance in the nose implies effective ventilation and ciliary activity. The temporary and isolated invasion of the previously healthy sinus is of no more gravity than the invasion of the nose by the same secretion, and such cases invariably clear up spontaneously. A single lavage to remove all pus and establish the fact that there is a freely patent ostium, is a wise procedure from a prognostic point of view, but the alveolar fistula should be left severely alone, in the hope of its closing off rapidly from the mouth, the latter being a potential source of renewed and continuing reinfection.

Another dental type shows an acute suppuration which is not the immediate sequence of active bilateral intranasal manifestations (the latter may be one-sided). This is suspiciously of dental origin if on lavage the ostium offers no resistance to the free flow of fluid. If there is pain in a tooth, spontaneously complained of by the patient or elicited by tapping on it with a metal instrument, or if this pain is manifested during lavage, the suspicion is still further increased.

On the other hand, a "silent infection" may result from a dead tooth, and this must be borne in mind. A careful radiographic examination of the sinus, teeth, and alveolus is now indicated, because if the latter is involved in a definite osteitis a portion of it may need to be removed during a radical operation. In my experience, however, this is relatively rare, occurring perhaps in not more than 1 per cent. of cases.

If one tooth or more than one is involved, immediate removal is indicated, followed by lavage through the inferior meatus, leaving the alveolar route untouched for fear of oral sepsis. Should the fluid flow freely through the ostium the re-establishment of ventilation and full ciliary activity is practically certain. We may always assume the possibility of a fairly patent ostium in these cases, because the sinus suppuration (if of short duration) is not consequent primarily on failure of ventilation through the nose, but on infection from one of its walls.

VACUUM PAIN

In the absence of any localized dental pain or tenderness the presence of pain or tenderness in the upper part of the cheek may mean "sinus vacuum pain" resulting from forced inspiratory efforts in clearing the nose. It always implies defective ventilation and a considerable ostial occlusion, which can be confirmed by resistance to lavage or by a testing tambour. In the older nomenclature such cases were referred to as "closed" or "manifest," words which unfortunately look like a contradiction in terms. The expression "manifest" is now passing into disuse.

If pus is escaping in any quantity through an ostium "vacuum pain" is unlikely, as any portal which permits the exit of pus will also allow the entrance of air up to the atmospheric level, causing restitution up to this pressure and abolition of the negative phase.

In active inflammation of sinuses the threshold of onset for pain is low, and should the ostium be much occluded aspiration of air (to cause a definite negative pressure in the cavity) by even a 10 c.cm. Record syringe may induce "sinus vacuum pain," which disappears quickly on release of the suction and re-entrance of air through the cannula. If no pain occurs on aspiration the ostium is relatively patent or the inflammation is rather chronic.

Oscillograph tests show that the merest chink will permit suction of air from the antrum by a large inspiration (such as sniffing) but its return by even a forced expiration, such as blowing the nose, is not possible, so that a negative phase with "vacuum pain" may persist for some time. When air re-enters it does so by gradual restitution up to atmospheric level only, but never to the positive phase, until free ventilation is restored. The "partial vacuum" is caused by an active force (inspiration), the "restitution" by a passive one (atmospheric pressure).

This seems to explain why pain is such a variable symptom in cases of antral suppuration, and why its presence does not denote an osteitis, which is sometimes assumed. Its presence does not imply that the pus is under pressure, which is often asserted, because the pain disappears on lavage. The correction of a "negative pressure" when ventilation is restored, either through the cannula or the ostium, would remove this source of pain, and is the more likely explanation. In further support of this view is the observation that no "positive pressure" has ever been met with in oscillograph tests in these cases.

Many cases accompanied by severe pain frequently yield very little pus on lavage, which, under the excessive purulent pressure or tension theory so often advanced to explain it, is contrary to expectation.

In the absence of intranasal factors likely to cause obstruction, the block to ventilation in these acute dental infection cases is invariably a vascular engorgement and part of the inflammatory reaction caused in the sinus, which rapidly subsides on removal of the infected tooth and lavage of the antrum, yielding some of our most brilliant results.

Chronic post-dental suppuration is usually the sequence of two causes. There may have been slow invasion of the sinus leading to oedematous inflammatory reaction with gradual occlusion of the ostium; or it may arise in persons in whom intranasal obstructive factors are already present. Removal of the infected tooth or teeth, with lavage, will scarcely suffice now, as conditions are similar to those discussed later, under the heading of chronicity of intranasal infective origin.

Infection by Intranasal Route: Antral Suppuration

"CATARRHAL TYPE"

I dislike the word "catarrh" because it is so vague and difficult to define with any degree of precision; but because it has a long tradition in our literature I am retaining it here. In the minds of patients it seems to cover every degree of nasal disturbance, from vasomotor or atrophic rhinitis to the most chronic form of sinus suppuration or even the grossest polypoid formation. Yet, in the absence of either of these conditions or any apparent evidence of the changes in the mucous membrane which we see associated with so-called "allergic manifestations," there are a large number of patients whom one may well describe as being "nose-conscious." Even between attacks of "colds in the head," they are sniffing and blowing the nose frequently, and complain of discomfort in breathing, or of "dropping" into the throat, or even of headaches.

The discharge is mostly mucus or muco-pus, rarely purulent. The condition is not one of "neurosis," though the patients are of a "nervous" type, and their mucous membranes appear to be hypersensitive to factors which others would ignore. Their apparently excessive secretory responses to the air stimuli of ordinary respiration may be likened to the peculiarity seen in certain individuals who perspire freely on the minimum of exertion.

In my opinion there is always a "ventilation imbalance" in these cases, for they frequently catch colds, and have passing attacks of a mild sinusitis, ending one day in a frank suppuration. Even between attacks, antral oscillograph tracings show irregularity of formation and outline, with at times loss of the "positive pressure phase," although little or no trace of muco-pus is obtainable by lavage, except sometimes at the residual end of a "head cold," and this may be found in any antrum if washed out at this stage.

The predominant recurrence of the "negative pressure phase" causes oedematous changes where its greatest force is usually exerted—namely, in the middle meatus and sinus, which now only awaits a fresh invasion of the air spaces to end in suppuration of the antrum. Subsidence of the inflammatory engorgement may be followed again by ventilation, especially if aided by lavage, but the cases tend to relapse again with the next active infection, and then belong to the class discussed later under "chronicity."

ACUTE INFLAMMATORY TYPE

This does not differ essentially from that just described except in the intensity of the infection which has induced it, and in its more arresting symptoms and rapidity of onset. Although it occurs commonly in patients of the "catarrhal" type, it also affects many others who previously had a symptomless nose. In my experience, however, it practically never gets established in a well-ventilated upper airway.

Some intranasal factor, such as developmental abnormalities of structure or acquired oedematous or organized soft tissue changes, capable of causing quick obstruction to ventilation in the region of the ostium, can be found if carefully sought for. The acquired changes are the residual effect of previous inflammatory attacks, but air and ciliary function was still possible prior to the vascular engorgement which precipitated the present sinus suppuration. Spontaneous subsidence of the latter may still allow complete or partial restoration of function, to relapse again with the next active infection, and so on for a long period. The condition has possibly been shielded under the harmless-sounding diagnosis of "catarrh."

A see-saw of this kind, associated with serious impairment of ventilation and with long periods of recurring "negative pressure phases," ends in sustained chronicity, attended by soft tissue changes, and possible polypoid formation, which gravely complicates the suppurative process.

DISTINCTION BETWEEN ACUTE AND CHRONIC TYPES

When is a sinus suppuration acute and when chronic? Lack states that the late Professor Killian held the opinion that all cases of maxillary sinus suppuration were chronic, but does not give his reasons. There is much to be said for this point of view, because if there is no pain to attract early attention we usually encounter these cases when the active inflammation in the general airway has subsided (as it has also at this stage in the antrum), though the latter has failed to ventilate and get rid of its purulent secretion. This often takes us chronologically to the end of the three or four weeks required for the regeneration of any epithelium shed in the more active phase. For this reason it seems correct to me, pathologically speaking, to regard suppuration during this period as acute, but afterwards chronic. Thus when we meet most of the cases they practically coincide with Killian's view.

Treatment in the Acute Stage

During the acute pyrexial period of the airway infection treatment should be on general lines: bed; a constant room-temperature, to avoid exacerbations; a purgative; diaphoretics (Dover's powder); and vasodilators (aspirin and phenacetin). Active operative procedures are contraindicated in this stage of any sinus suppuration. This is a view now well established, gaining more and more support from the experience of reliable observers. If there is much nasal occlusion it seems wise to leave this alone to subside on general lines, as no ventilation is safer for the moment than an imperfect partial one, which only intensifies the vascular engorgement around the ostium by forced efforts of respiration, such as sniffing and blowing the nose, either of which is capable of creating a pressure action equivalent to

800 mm. of water or more. Grunwald deprecated blowing the nose in the acute stage, and I think wisely so.

There is no intranasal treatment I know of that is capable of rapidly aborting the inflammatory manifestations and which removes them permanently. Where it is possible, in the apyrexial stage, a change to the bracing air of the seaside may, however, provide the necessary ventilation stimulus to the still engorged mucous membrane, with restoration of vascular tone and sinus aeration. When ventilation is returning to the nose, inhalations of mentholized steam are comforting, and the wearing of a gauze mask indoors acts similarly, especially diminishing the tendency to sneezing attacks.

A solution containing ephedrine (alkaloid), sodium bicarbonate, and sodium chloride, 8 grains of each in 1 ounce of distilled water, is beneficial. One teaspoonful of this with one of hot water is sprayed freely, high in the nose, three or four times a day. It cleanses the area of the ostium, removing the accumulations of ciliary output, and diminishes the need for the patient to use frequent respiratory force for this purpose. If suppuration still persists attempts at restoring ventilation are now indicated.

Surgical Treatment for Subacute or Chronic Stage

Catheterization of the ostium is too uncertain a method, and, in my opinion, many of the cases reported as cured by it cleared up spontaneously because ventilation was restored by local vaso-constrictors used as anaesthetics preparatory to the passing of the catheter.

LOCAL VASO-CONSTRICTION AND LAVAGE BY PUNCTURE

Lavage enables us to assess the degree of obstruction relatively well. As the purpose of the solution used is chiefly mechanical—to remove the pus—a simple non-irritating preparation such as the three sodium salts (chloride, bicarbonate, and biborate) answers quite well.

The first lavage acts as a test of patency. After puncture, an attempt should be made to wash out the cavity, omitting the use of any cocaine or adrenaline under the middle turbinate. If the resistance to flow is marked and produces pain, the lavage should be stopped, and cocaine and adrenaline on a wool applicator placed in the region of the ostium for ten minutes, leaving the antral cannula still *in situ*. A further attempt to wash out should then be made. If the resistance is now much less, and increased patency is shown, the obstruction is mainly vascular engorgement, and the prognosis of treatment by this method is hopeful. The ephedrine and soda spray should be continued.

The second lavage should take place three days after the first, when the reactions of the previous manipulation have subsided. (I do not favour daily lavage for this reason.) As previously, the test for patency should be done, and the result noted before and after use of vaso-constrictors in the middle meatus. A small tambour "patency tester"[1] is quite helpful for this purpose, the prognosis being good if "positive and negative phases" are indicated by the lever, and if the excursion is enlarged by increased respiratory effort. The prospect of recovery is good up to the end of the fourth or fifth week from the estimated onset of the original airway symptoms of invasion (acute stage).

DEPLETION BY SCARIFICATION

This is a very promising method, although my personal experience of its use is only recent. My colleague Tilley and former teacher Lack have advocated it for years if there is much apparent inflammatory swelling beneath the middle turbinate, but it does not appear to have been generally practised.

[1] Alfred Cox and Sons, 37, Duke Street, London, W.1.

Under local anaesthesia, and after antral lavage, I favour several punctures or short incisions below the ostium, in front of it (on the uncinate process), and above (along the inferior border of the middle turbinate and the region of the bulla ethmoidalis). This taps the whole area of vascular distribution around the ostium, and soon causes depletion of the engorgement. After ten minutes to allow arrest of haemorrhage, 20 per cent. silver nitrate should be applied to the bleeding area. This has a mild styptic and depleting action. After four or five days to allow the reactions of manipulation to subside, further lavage will reveal the effect on ventilation. If the results are favourable, puncturing or incising may be repeated, but if not a new opening into the airway must be established. Although the maxillary antrum is undoubtedly the commonest sinus to be infected, it is, by virtue of its size, accessibility, and general freedom from osteitis, also the earliest in which to restore air function.

ANTROSTOMY

The site of the surgical opening appears to be immaterial so far as the purposes of ventilation are concerned, provided that it fulfils certain conditions. From the point of view of operative accessibility, however, the inferior meatus is the route of election. The conditions are as follows. (1) The opening must be in communication with intranasal air currents and in pressure phase with them. (2) There must be permanent patency. (3) The opening must be sufficiently large to permit the escape of any inflammatory product likely to arise in subsequent infections. (4) There must be assured easy ventilation in the upper nose to protect the higher sinuses.

In order to fulfil this last condition, I do not hesitate, if the septum is deflected and the ostial area crowded, to resect the former and cut down the anterior end of the middle turbinate. I have removed the latter as a routine practice for over twenty years in all non-septic cases of marked inspiratory obstruction without any trace of crusting ever following as a result. The anterior ethmoidal cells should be carefully examined for diseased tissue and crumbling bone, as this invariably accompanies chronic antral suppuration, especially of intranasal origin. If found it should be freely removed to avoid antral pyo-sinus.

Very Chronic and Complicated Antral Suppuration

Owing to long periods of disturbed ventilation, extensive oedematous soft tissue changes (more or less organized) are always present in the nose or sinuses, or both. These changes can be seen in the nasal passage and often surmised by lavage in the antrum, but a radiograph with the excellent modern technique generally places this beyond doubt. Its thorough removal to re-establish full and free ventilation in both the nose and the antrum is the only guarantee of success, and if no foci of sepsis remain in the upper sinuses, this may be done with great freedom from any risk of subsequent crusting, *provided that the almost complete integrity of the inferior turbinate is rigorously respected.*

With our present knowledge of its power to regenerate in from six to nine months, we need not fear removal of the antral lining, so that for purposes of accessibility a canine fossa approach is the most effective. It is well, however, to remember that the opening thus made has no influence whatever on the subsequent ventilation principle underlying the function re-established by the intranasal window which accompanies it, as on the latter all hope of success depends.

Only the markedly oedematous portions should be removed, because they can never function again as mucous membrane. That not so affected should be left for the rapid regeneration of a new lining.

The evolution of antral surgery shows clearly that openings made through the external sinus walls, away from intranasal ventilation, have proved a failure, and are now obsolete, because they are contrary to the principle which maintains air function in the sinuses and restores its loss when absent. The early Caldwell method or those of Cowper and Kuster have gone this way. The Caldwell-Luc operation, as now performed, still holds its place for cases complicated by gross oedematous changes in the lining, such as those just described, but in the absence of this complication, and for ordinary recent suppuration, the intranasal antrostomy—the really functioning portion of the Caldwell-Luc operation—must continue to be the method of choice.

I frequently make a second opening in the hiatus semilunaris by enlarging the anatomical ostium region, as recommended by Harmer and Gerber. This provides thorough ventilation of the cavity and the additional very important service of affording a continued portal of output for ciliary activity. Horgan carries his intranasal antrostomy opening high into the middle meatus, but this is for cases complicated by ethmoidal disease. It is excellent as a combined operation, and is planned on sound principles of ventilation.

PRESENT POSITION OF CAESAREAN SECTION IN OBSTETRIC PRACTICE *

BY

J. BRIGHT BANISTER, M.D., F.R.C.P.

CONSULTING OBSTETRIC SURGEON, QUEEN CHARLOTTE'S HOSPITAL

When Numa Pompilius, Consul of Rome, promulgated the *Lex* he did so to the end that the opening of the uterus of the dead woman might save the child and so help in some measure to check the falling birth rate. When the operation was performed upon Henry VIII's consort, Jane Seymour, in 1537 it was done as a last resource in the struggle to produce a live heir to the throne. Later the very high mortality of the operation was faced as an alternative to the certain death of both mother and child: it was an attempt to avoid an inevitable catastrophe. In these days it would almost seem that Caesarean section is done because it is the easiest way in which the surgeon can deliver the woman of a child.

That all is not well nor has been for some years is shown in the written opinions of several authorities. The late Dr. Whitridge Williams, in the fifth edition of his *Obstetrics* (1921), says: "Many practitioners in urban districts have been led astray by the teaching of those who regard labour as a pathological rather than a physiological process, with the result that interference upon insufficient indications is frequently undertaken by those who do not fully appreciate the risk involved." He further quotes the conclusion of the Massachusetts State Medical Society in 1921, that next to puerperal infection Caesarean section was, in that State, the commonest cause of death after labour.

In the final report of the departmental committee of the Ministry of Health appears the polite but disturbing statement: "The committee's observations lead them to believe that in some cases there may be a tendency to resort to Caesarean section as a treatment for complications of labour, perhaps without due consideration of other methods of obstetrical treatment."

The New York Academy of Medicine Committee in its report upon maternal mortality in New York City (1933) concludes that "the data reveal an excessive use of the Caesarean section, and, as a result, a great increase in the mortality." The committee goes on to the most important conclusion "that a sharp reduction in the number of Caesarean sections performed is to be strongly recommended. Only by the definite narrowing of its use to the legitimate occasions demanding it, as well as by the provision of capable operators, can a decrease in these deaths be achieved." Holland animadverts (*Lancet*, April 27th, 1935) upon "the increased opportunities given to local practitioners who may possess neither the requisite judgement nor skill of performing Caesarean section" and remarks that "the number of Caesarean sections has increased in an astonishing manner."

These statements suggest that the operation of Caesarean section occupies an unjustifiable position in obstetric practice to-day, that the incidence of the operation is far too high, that the indications for its use are at present too wide, and that it is attended by a mortality which makes it suspect among measures that should have for their aim the diminution of a maternal mortality which is at present too high.

Some Recent Figures of Caesarean Section

All these contentions are, I submit, abundantly borne out by a consideration of a series of cases, the result of which I present to you to-day. The series contains 3,486 cases of Caesarean section, 1,763 of which are taken from the reports of five large maternity hospitals in the British Isles during the years 1922–32, and 1,723 cases which occurred in the Borough of Brooklyn in the years 1921–26, and are analysed in the *American Journal of Obstetrics* (September, 1928). A study of these cases does, I fear, make it certain that the strictures upon the present place occupied by Caesarean section are not undeserved.

The enormous increase in the incidence of the operation will be obvious when we remember that in 1910 the late Dr. Amand Routh, in a monograph read at the Cinquième Congrès International d'Obstétrique et de Gynécologie at St. Petersburg, and published the next year in the *British Journal of Obstetrics*, had collected 1,282 cases as the complete experience of over 100 obstetricians practising in the British Isles who were living in 1910. Compare this number with 1,723 operations which were done in one American borough in five years, or with 609 operations in a single English maternity hospital of under 100 beds during a period of ten years.

Indications for the Operation

Turning to the indications for the operation we also see a very marked contrast between the conditions obtaining in 1910 and those in evidence to-day. Dr. Routh (loc. cit.) gives in a summary of the indications present in the cases the following:

Obstruction to Labour:

1. Contracted pelvis.
2. Fibromyomata.
3. Cancer of cervix or vagina.
4. Ovarian tumours.
5. Other pelvic tumours (osteomata, enchondromata, cancer of rectum, hydatid, bicornuate uterus).
6. Stenosis of vagina or cervix.
7. Miscellaneous (previous ventral fixation, tonic contraction, hour-glass contraction, prolonged gestation).

Uterine Haemorrhage:

1. Concealed accidental haemorrhage.
2. Placenta praevia.

Constitutional Crises:

1. Eclampsia.
2. Miscellaneous (chorea, advanced heart disease, obesity and anasarca, myasthenia gravis).

In all there are twenty-four different indications.

* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Melbourne, 1935.

In the series under review there are fifty-five separate indications for the performance of the operation, including such diverse states as failure to progress (twelve cases), advanced age of mother (twenty cases—average age 39), breech presentation (thirty-eight cases), previous repair of perineal tears, and unwillingness to undergo the pains of labour. In no fewer than 2,212 cases the indication given is contracted pelvis, surely an unwarranted slur upon modern feminine physique.

And now as to the risks of the operation. Can it be defended upon the grounds of safety? In these 3,486 cases there were 231 maternal deaths, giving a maternal mortality of 6.6 per cent. This mortality must be compared with the gross maternal mortality following childbirth at present occurring in England and Wales, which may be taken at somewhat about 0.45 per cent. It follows that Caesarean section has a mortality sixteen times as great as the mortality attending all obstetric cases. When, moreover, we remember that the Registrar-General's figures include some 170 deaths following Caesarean section (1932), the increased danger of the operation is abundantly obvious.

It will no doubt be argued that it is not fair to consider this mortality *en masse* of the operation as an argument against its so frequent employment, and that it is unfair to results which may be expected in the hands of competent operators. It may be said that these results include cases in which the Caesarean section is done as a last resource—in infected cases or in grave maternal states. All this is true, but may I point out that the mortality rate in 1,763 operations performed in famous maternity hospitals by experienced and distinguished operators amounts to 5.8 per cent. The figures are published and open to all to read, and are probably much better than those which obtain over the length and breadth of the land.

Factors Responsible for Increase

It is not within the scope of this paper to adduce reasons or excuses for the high mortality attending the operation, but it is perhaps germane to to-day's discussion to point out any factors which appear conducive to the enormous widening of the indications for its performance, which widening in its turn is the cause of the amazing frequency of the operation.

First and foremost may I express my profound conviction that the purely surgical outlook upon obstetric probiems lies at the root of this upas tree at present flourishing in the fair garden of obstetrics. The dictum of Hilton in the management of pent-up pus is being adopted as the rule for the release of the often only apparently pent-up baby. "Let it out," say the surgically wise but obstetrically foolish, and so it is done. With the knowledge that a uterus can be so easily emptied by a Caesarean section comes a contempt for nature, with her more deliberate, painful, but infinitely safer technique. This is especially noticeable in the modern treatment of cases of disproportion, where Caesarean section is employed either without giving nature any chance at all or after a travesty of the trial labour. It is the experience of all of us that nature's power of overcoming moderate degrees of disproportion is infinitely greater than we imagine to be the case ; while to believe that a trial labour can be truly so called until true second stage pains have been present for some hours, is to be ignorant of the fundamental facts of the mechanism of labour.

A second factor which has produced this orgy of operations is one almost wholly educational. It is the failure to appraise by full and complete examination the exact conditions obtaining in a given case. The indication "failure to progress" is a good example of what I mean, for the use of such an expression is tantamount to an admission that the operator is ignorant of the local obstetrical condition present.

Such an appreciation of a difficult case is only made possible by a prolonged practical training in obstetrics and in the conservative practice thereof, and the responsibility for improved conditions in this respect lies upon other shoulders than those of the teachers of obstetrics who have laboured for years to effect improvement. It is essential that the practice of obstetrics be in the hands of obstetricians and not in the hands of surgeons who do obstetrics.

A further factor which is responsible in part for the present condition of things is the increasing value given to the life of the baby in the marshalling of the facts which are to decide the treatment. This is inevitable in view of a falling birth rate and deliberate limitation of families, but I am confident that too much stress is being laid upon the infant's life, to the sacrifice in many cases of the mother.

Lastly, in this connexion it is, I think, a fact that we do not sufficiently realize that when we subject a woman to a Caesarean section we shoulder the risk of an abdominal operation the mortality of which, if we put it at 1 per cent., is still five times greater than that 0.2 per cent. which most of us regard as an almost minimal mortality in childbirth. We also add "previous Caesarean section" to the difficulties of those who may have to order the management of a future labour.

It is my firm conviction that, as at present practised, the state of Caesarean section is a prostitution of what, under proper conditions, is a beneficent operation to a desire for speedy delivery in cases where the only real requirement is skilled obstetrics.

TREATMENT OF CHRONIC NON-SPECIFIC ARTHRITIS WITH INTRAMUSCULAR INJECTIONS OF SULPHUR

BY

DAVID KRESTIN, M.D., M.R.C.P.

PHYSICIAN, WITH CHARGE OF OUT-PATIENTS, AT THE DREADNOUGHT HOSPITAL ; ASSISTANT PHYSICIAN TO THE LONDON JEWISH HOSPITAL

Substances producing febrile reactions have a recognized place in the treatment of chronic arthritis. While personal experience with intramuscular injections of sterile milk, casein, and similar preparations has been disappointing, improvement has occasionally followed the intravenous injection of T.A.B. vaccine. The constitutional reactions with this substance were so variable, however, and in some instances so severe, that it was seldom practicable to give more than two or three injections, thus restricting improvement.

In 1921 Meyer-Bisch[1] claimed good results from the intramuscular administration of suspensions of sulphur in oil. In this paper the results obtained in fifty cases of chronic non-specific polyarthritis similarly treated are given. A 1 per cent. suspension of sulphur in oil was used, as introduced by Schroeder[2] in 1927 under the name of "sulfosin" for the treatment of neurosyphilis. Intramuscular injection of this preparation is followed in from ten to twenty-four hours by a febrile reaction, of such degree that it can readily be controlled and varied to suit individual patients.

General Therapeutic Considerations

It is extremely difficult to assess the value of any treatment in chronic arthritis, for, excluding such specific conditions as gout and gonococcal infection, striking im-

provement is occasionally seen to occur spontaneously or after the most divergent therapeutic measures. For this reason only those patients were chosen who had already received, without success, prolonged and thorough courses of established forms of treatment, such as the removal of septic foci, vaccines, physiotherapy, various drugs, and in some cases sojourns at spas. Reference to the table (p. 1146) shows that many of the cases were of months' and some of years' duration. Whatever the previous record, every patient, on coming to the out-patient department, received a further period of treatment by one or more of these methods, lasting generally not less than three months.

The routine included the radiological examination of teeth, sinuses, and two or more affected joints; any obvious source of infection was treated. It was seldom necessary to remove more than one or two teeth, though many of our patients were edentulous on arrival. A rather high proportion—about one in twelve—were found to have pus in the maxillary sinuses; these were referred to the throat department, and where practicable an autogenous vaccine was given. Nearly all received some form of treatment in the physiotherapeutic department and various drugs by mouth and injection. Metabolic and endocrine factors were considered, and treated where they appeared to be important. By such measures a gratifying number of patients improved to a satisfactory extent, and in some early cases appeared to recover completely.

The best results seemed to follow the use of iodine by mouth (the liquor iodi simplex, *B.P.*) and intramuscular injections of "gorun" (quinoline-carboxylic acid + hexamethylenetetramine). Colloidal sulphur and such sulphur-containing substances as contramine and iodolysin did not appear to help, and so were given up early. Gold was not used in this series, as it is at present the subject of a separate investigation. The number of patients who failed to derive any benefit whatever from such out-patient measures was relatively small, and to these only was further treatment by intramuscular sulphur offered. No selection was made so far as site, type, and chronicity were concerned, but since all except three were admitted to hospital, where accommodation for such cases is necessarily limited, the younger and more robust were generally chosen, although older patients were not excluded.

Details of Treatment

The drug is supplied in ampoules, which are warmed and thoroughly shaken to produce a partial solution and partial suspension of the sulphur in the oil; a glass bead in the ampoule facilitates this. The injection is made deep into the buttock or outer aspect of the thigh, using a medium-bored intramuscular needle; if too fine the lumen may become blocked with particles of sulphur. The sensitivity of the patient is first tested with a preliminary dose of 0.5 c.cm., after which further injections are given every five or six days in steadily increasing amounts, depending upon the severity and duration of the reactions.

There is some local pain and occasionally swelling and induration at the site of the injection shortly after it has been given, but this can be reduced or even completely prevented by infiltrating the area about ten minutes earlier with "A.B.A." or a similar anaesthetic. A hot, moist application also relieves pain, and aids resolution. Local suppuration or sloughing did not occur. In ten to twenty-four hours a general reaction follows, which varies according to the sensitivity of the individual and the size of the dose. A rise in temperature is the most notable feature. In young and robust patients a maximum rise to 103° F. is aimed at, but in elderly or feeble subjects it is usually sufficient to attain 100° F. At the same time, and generally varying with the degree of pyrexia, constitutional symptoms are complained of, such as malaise, headache, aching pains in the muscles and limbs, and, rarely, nausea. Vomiting only follows large doses, and should be prevented. The skin becomes hot and flushed, and perspires freely.

In patients who subsequently made good progress a constant feature was an increase of pain, stiffness, and swelling of the affected joints; the absence of this usually indicated slow or poor recovery. Rigors were absent. These symptoms generally subsided in about twenty-four hours, but in very susceptible subjects, or with very large doses, they sometimes lasted for thirty-six or even forty-eight hours. During this period comfort was obtained with the usual analgesics and sedatives. Between the reactions the patients felt well, and were able to get about if the joints permitted. During the pyrexia a leucocytosis appeared, which usually averaged about 20,000 per c.cm., but was occasionally much greater, and in one instance reached 51,000; the increase in white cells was due almost entirely to polymorphonuclear leucocytes. After four or five days the blood count returned to normal.

By varying the dose and frequency of the injections according to the age, general health, and more particularly the individual sensitivity of each patient, the reaction could always be kept within the limit of tolerance. The highest dose used was 10 c.cm., but in many instances it was unnecessary to employ doses larger than 4 c.cm. or 5 c.cm. In "successful" cases diminution of pain and swelling, with increased mobility of the affected joints, was observed after the third or fourth dose. The number of injections required, however, varied greatly with the severity and chronicity of the disease. In this series it ranged from four to twenty, and the period occupied by active treatment from six weeks to eight months. After the third dose massage, passive movement, and some form of heat therapy were found useful between injections. Complications or unpleasant effects have so far not been observed, and anaemia, albuminuria, or loss of weight was not noted even after prolonged therapy. No patient became worse during treatment.

Results

The results of treatment are summarized in the table. To assess these the nature and extent of the joint lesions must be taken into account. The classification of the arthritides is beyond the scope of this paper, and terms with an aetiological or pathological implication, such as "infective," "atrophic," and "hypertrophic," are avoided, as these are still controversial. For our purpose the cases are classified according to the main anatomical changes determined by clinical and radiological examination, showing the extent of synovial, peri- and para-articular tissue, and cartilaginous and bony involvement. The term "osteo-arthritis" is employed to describe those cases in which the pathological changes are almost entirely limited to the bone and cartilage. Since the results of treatment appear to depend very considerably on the extent to which bone and cartilage are affected, the cases are divided into four groups:

A. The bone involvement is slight or absent.

B. The bone changes are moderate and such as can be detected only in *x*-ray films.

C. Bone changes are advanced and can be detected without radiological examination; in many of these partial dislocation of the joint and deformity are present.

D. Osteo-arthritic; frequently affecting the larger joints and spine of elderly individuals and in which the soft tissues show little or no involvement.

This paper is based upon the first fifty cases in which treatment was commenced. Five patients refused to continue treatment after the first or second injection.

The results are arranged in four columns:

1. *Good.*—The symptoms disappeared completely; swelling disappeared altogether or nearly so, and the range of movements returned to normal.

2. *Considerable Recovery.*—Pain ceased completely, and swelling largely disappeared; the range of movements improved to little short of the normal.

3. *Partial Improvement.*—Though definitely better, the joints did not regain useful function.

4. *No Improvement.*—The condition of the joints remained unchanged.

Since these were tabulated further cases have been treated with fairly similar results.

Results of Treatment (Fifty Cases)

	No.	F.	M.	Average Age	Average Duration of Symptoms	Minimum Duration of Symptoms	Maximum Duration of Symptoms	Results			
								1 Good	2* Considerable Recovery	3 Partial Recovery	4 Not Improved
A. Bony changes slight or absent	24	16	8	37 years	12.4 months	2 months	48 months	15	2	4	3
B. Bony changes moderate ...	7	5	2	52 ,,	10 years	2 years	15 years	3	3	1	—
C. Bony changes advanced ...	9	7	2	43 ,,	14.5 ,,	1 ,,	27 ,,	—	4	3	2
D. Osteo-arthritis	5	2	3	64 ,,	18 ,,	3 ,,	23 ,,	—	2	1	2
Refused to continue treatment	5	—	—	—	—	—	—	—	—	—	—

Reference to the table shows that although no group is debarred from the prospects of some degree of recovery, the best results are to be expected in younger patients with relatively shorter histories and the absence of advanced bony or cartilaginous damage. Improvement may be anticipated only in the soft tissues about the joints. When there is much wasting and contracture of the muscles the improvement will be less, and when deformity due to such changes combined with partial dislocation is present the chances of recovery become still less, though pain and stiffness may be relieved. Thus in estimating the chances and degree of recovery the extent of bony and cartilaginous damage must be determined. This necessitates the help of radiographs, since the earliest manifestations of such damage cannot otherwise be recognized. Crepitus, due to relatively advanced bony involvement, may be masked by thickened and oedematous synovial and periarticular tissues, or by effusion.

These results may be illustrated by the essential features of the following representative cases.

Group A.—(1) A married woman aged 36 had had pain and swelling of the right knee for four years. During the last nine months it had become much worse, and other medium-sized joints were affected to a less extent. For four months she had been unable to stand on her right leg.

Various forms of out-patient treatment had been given at different institutions for about four years without effect. One tooth with an apical abscess was removed, and autogenous vaccine from this source was administered. The tonsils and sinuses were considered healthy. A cervical erosion was treated. Since the arthritis was becoming worse the patient was admitted on August 24th, 1930. The general condition was good and the temperature normal. The right knee was greatly swollen; the periarticular tissues were thickened and a moderate effusion was present. Movement was restricted to about 5 to 10 degrees. Similar but less marked changes were present in the left knee, and pain and stiffness without swelling in other joints. Four weekly injections of sulphur were given, the highest dose being 4 c.cm. Improvement was rapid after the first injection, and was well maintained, with diminution of the swelling. Gentle massage with passive and active movements was then used. The patient was discharged after eight weeks with absence of obvious swelling and full range of movement in both knee-joints.

(2) A single woman, aged 22, in the same group, had noticed progressive pain, with swelling and limitation of movement, in the right wrist for six months. There were similar but less advanced changes in the left wrist, and the proximal interphalangeal joints of the first and second fingers of both hands. The left maxillary antrum contained pus, and this received treatment until it was clear. No other source of infection was found. The chest was clear and there was no cough; no radiographical examination was made. Since all medical and physical therapy had been ineffectual, she was admitted to hospital and given a course of seven injections of sulphur. Very slight improvement followed. She was discharged on October 30th, 1931, as an "unsuccessful" case.

Since then the patient had received many varieties of treatment at various hospitals and special rheumatism clinics without success. In June, 1934, fresh joints became involved, and those originally affected were very much worse. On December 22nd, 1934, the patient returned with clinical manifestations of an acute and progressive pulmonary tuberculosis. This was confirmed by radiological and bacteriological examinations. The chest symptoms were of three weeks' duration. The possibility that a latent tuberculous infection of the lungs was present from the beginning, and accounted for the intractable nature of the arthritis, cannot be dismissed.* There is no evidence that the joint condition is tuberculous.

Group B.—A nurse aged 30 had had progressive pain and swelling in the wrists and fingers of both hands and in other middle-sized joints for seven years. For the last six months before examination movement at the wrists had been absent and it was limited at the finger-joints. The hands were held in a position of flexion, with slight ulnar deviation of the fingers at the metacarpo-phalangeal joints and hyperextension of the terminal phalanges. The swelling in these joints was mainly periarticular, and was emphasized by wasting of the muscles. Attempts at movement were extremely painful, and were accompanied by bony crepitus. Radiographs of the joints showed rarefaction of the ends of the bones, separation, and irregularity of the articular surfaces. Similar but less advanced changes were present in the elbows, knees, and ankles. Various therapeutic measures had been tried without success, and for the past six months she had been unable to work. When examined the teeth and tonsils had been removed.

After a preliminary course of physiotherapy and iodine by mouth, without effect, she was admitted on August 24th, 1931. Six weekly injections of sulphur were given, each producing a good reaction. Massage and passive movements were commenced after the third injection. Improvement was early, obvious, and rapid. On discharge from hospital on October 15th, 1931, the general health was good and there was practically full range of voluntary movements in all joints. Movements still elicited crepitus, but were painless. There was a little periarticular swelling of the wrist and some fusiform thickening of the proximal finger-joints. The

* Since this paper was written two patients with a chronic quiescent pulmonary infection have been encountered, in both of whom a relatively early chronic arthritis has proved extremely resistant to all forms of treatment, including intramuscular sulphur and gold.

patient was able to resume full-time work, and has continued at work in comfort up to the present time. She has been periodically examined, and her condition has remained stationary since her discharge from hospital.

Group C.—A domestic servant, aged 26, exemplified a progressive case of "subacute infective polyarthritis" with advanced bony changes. For more than twelve months she suffered from pain, limitation of movement, and swelling, beginning in the right wrist and progressively affecting most of the other joints, including those of the jaw and cervical spine. She had been unable to walk for six months, and during the last two had been completely bed-ridden. Since the onset many forms of "in-patient" and "out-patient" treatment had been tried at several hospitals and her teeth and tonsils removed without avail.

When admitted on June 21st, 1930, the patient was an ill-looking girl with rapid pulse, moist perspiring skin, and an irregular pyrexia up to 100° F. Considerable swelling and immobility of most of the medium-sized and smaller joints were present. Each elbow was flexed to about a right-angle, and the fingers were flexed and deviated to the ulnar side; the knees and hips were bent up and could not be straightened. The swelling was greatest in the elbows, wrists, and knee-joints, and was due in great measure to the periarticular tissues, but to a less extent to effusion into the joints, which could hardly be moved; attempts to do so produced great pain and elicited coarse bony crepitus. She was unable to feed or to help herself. The mouth could be only partly opened, and movements of the neck were accompanied by pain. Radiographs showed advanced changes of the articular surfaces of the bones.

After three weeks on a liberal diet, sedatives, iodine, and vapour baths, the general condition improved and the temperature settled; the condition of the joints, however, remained unchanged. Injections of sulphur were now started, and two separate courses, each consisting of ten weekly injections, were given, with an interval of eight weeks between them. The highest dose in each course was 8 c.cm. After the first three or four doses slow but steady improvement commenced. Gentle massage and passive movements were started after the fifth dose, and later some active movements became possible. During the last four weeks in hospital she walked about the ward with a stick for support. She was discharged on April 28th, 1931, and by that time had gained 2 st. in weight. All the joints were greatly improved and the swelling had much diminished, though considerable periarticular thickening around the knees, wrists, and fingers was still present. The extent of the movement possible varied in different joints; in both wrists and knees passive movement was possible to within 30 degrees of normal, and active movement to a less extent. Coarse bony crepitus was still obtained when most of the joints were moved.

Since this patient lived a long way from London, re-examination was possible only once, twelve months later. Her condition then was much the same as at her discharge; she was able to do light work in the kitchen, and get about easily with the help of a stick. Pain was slight, and absent in wet weather.

Group D.—A woman aged 62 may be cited as a case of osteo-arthritis. She had progressive pain, stiffness, and limitation of movement in the spine, shoulders, hips, and other joints for over ten years. During the last six months before admission she was unable to walk, and divided her time between the bed and a bath-chair. Various forms of treatment had been tried since the onset of the trouble, but without arresting the progress of the disease. On admission to hospital on January 6th, 1931, she was bed-ridden. The larger joints, such as the hips, shoulders, knees, and spine, showed considerable limitation of movement, but no swelling; radiographs demonstrated characteristic osteo-arthritic changes.

Six injections of sulphur were given, the largest dose being 5 c.cm. Improvement commenced after the second injection, and the patient was able to walk freely and without pain, with the help of a stick, by the date of discharge, March 2nd, 1931. This patient has been regularly followed up. The improvement has been maintained, and further treatment has been unnecessary. When last seen in September, 1933, she was managing a small cottage, cooking for three people, and was able to walk about a mile with the aid of a stick.

Relapses

Of the cases which definitely improved after treatment about one-fourth subsequently had a return of symptoms. In these the relapsed condition was always less severe than that preceding treatment, and in some it was quite mild. Simple therapeutic measures were generally sufficient to effect improvement. The shortest period in which a relapse occurred was four months, and the longest period so far was two years. It is noteworthy that recrudescence of symptoms occurred most often in Groups A and B, in which the patients were often younger and the disease had frequently been active and comparatively rapid in progress. Many of these would undoubtedly be considered as "infective." Since there is no reason to believe that intramuscular sulphur affects the cause, recurrence is not surprising, and stresses the need for careful inquiry into causative factors.

Contraindications

In no instance was the disease made manifestly worse, nor has any harmful effect been observed provided that a non-acute quiescent phase is chosen. Though induration and pain at the site of the injection sometimes occur, abscess formation has not been encountered.

Treatment was not given:

1. During the acute phase of arthritis, which was first allowed to subside. This requires special emphasis, since an exacerbation may result if the acute phase is chosen. Complete rest and relief of pain are then essential.
2. To elderly feeble or emaciated individuals.
3. To nervous patients, or to those having hysterical or psychopathic tendencies.
4. To patients with active organic disease other than arthritis—for example, pulmonary tuberculosis.
5. To very obese patients; these do not stand this form of therapy well.

Mode of Action

Sulphur taken by the mouth or in the form of baths has enjoyed a reputation in the treatment of "rheumatic" disorders since the days of Pliny. Apart from its aperient action and the effect on the bacterial flora of the bowel, the influence on arthritis of sulphur taken orally is doubtful. Investigations of sulphur metabolism are beset with so many difficulties that one hesitates to draw conclusions from them. Nevertheless Cawadias[3], on the basis of a relative increase of the total sulphur excretion in the urine of the patients suffering from chronic rheumatoid arthritis, considered that there was an increased katabolism of sulphur-containing protein in this condition.

Has sulphur any specific influence when administered intramuscularly? It is tempting to attribute the results obtained in the previous series of cases, in part at least, to such action. It must, however, be admitted that there is no direct supporting evidence. Experiments on rabbits have shown that the drug disappears from the tissues in the course of a few weeks after it has been injected. The manner in which this is accomplished is at present uncertain. The first attempt to use the drug in this way for the treatment of arthritis was made by Meyer-Bisch and Basch[1] in 1921. They found that the sulphur and nitrogen output in the urine following the injection was diminished, and concluded from this that an abnormal sulphur metabolism was beneficially influenced.

Whatever specific effect may be claimed for sulphur there can be little doubt as to the importance of the non-specific reactions, since improvement in the patients appeared to depend upon the consistent occurrence of pyrexia and leucocytosis. The nature of such reactions is but little understood, but they seem to be associated

with a general stimulation of metabolic processes and defence mechanisms.

Holböll and Herborg[4] showed that intramuscular injections of sulphur constantly produced a leucocytosis from 20,000 to 30,000 per c.mm., the increase being due almost entirely to polymorphonuclear cells, and Power[5] demonstrated that in rabbits this was accompanied by a definite leucoblastic hyperplasia of the bone marrow. Such a polymorphonuclear leucocytosis was a constant feature in our patients. If such leucoblastic reaction is accompanied by an increased mobilization of bactericidal or other antibodies as Gay and Claypole[6] believe, we may have a partial explanation of the beneficial effect of treatment. More obvious, however, are certain vascular changes which may be observed in the affected joints following the injections, for pain, tenderness, stiffness, and swelling are all temporarily increased, and the skin becomes hot, red, and moist with perspiration. These cutaneous changes are also noticed to a less extent over the rest of the body, and it is possible that improvement in the joints may be the result of greater vascularity, accompanied by a corresponding increase in the capillary permeability and the lymph flow from the area. Such changes may be explained partly by the pyrexia (Davis and Petersen[7]).

Investigations by Mackay[8] offer a reasonable explanation of the pyrexial reaction. He found that after intramuscular injections of sulphur into rabbits there follows in from twenty-four to forty-eight hours an acute tissue necrosis with debris formation, accompanied by a polymorphonuclear leucocytic infiltration, which subsides with regeneration and clearance of the debris in about thirteen days. He suggests that the fever is due to absorption of protein liberated by the necrosis at the site of the injection. It should be noted, however, that with the doses used in the treatment of chronic arthritis no residual disability in the injected muscles follows, and that pain and infiltration, should they occur, are always temporary, seldom lasting longer than twenty-four or thirty-six hours.

Summary and Conclusions

1. The treatment of chronic non-specific arthritis by intramuscular injections of sulphur is described, and its advantages over other pyrexial forms of therapy is discussed.

2. The cases considered form a group of fifty patients, in whom other recognized forms of treatment (not including chrysotherapy) failed to give benefit.

3. The analysed results show that considerable improvement may be expected in a proportion of patients in whom the changes are limited to the soft structures about the joint, and are not permanent in nature. Less improvement is to be anticipated when damage of a permanent kind is present, such as involvement of bone and cartilage or partial dislocation and deformity.

4. A tendency to relapse when aetiological factors are still active is noted.

5. Certain contraindications to sulphur treatment are mentioned, particularly the acute phase of the disease.

6. The mode of action is briefly discussed.

REFERENCES

[1] Meyer-Bisch, R., and Basch, E.: *Biochem. Zeit.*, 1921, cxviii, 39.
[2] Schroeder, K.: *Klin. Woch.*, 1927, vi, 2189.
[3] Cawadias, A. P.: *Lancet*, 1927, i, 1283.
[4] Holböll, S. A., and Herborg, G.: *Hospitalstidende*, 1930, lxxiii, 1027.
[5] Power, T. D.: *Lancet*, 1932, i, 338.
[6] Gay, F. P., and Claypole, E. J.: *Proc. Soc. Exp. Biol. and Med.*, 1914, xi, 47.
[7] Davis, B. F., and Petersen, W. F.: *Journ. Exper. Med.*, 1917, xxvi, 699.
[8] Mackay, R. P.: *Arch. Neur. and Psychiatry*, 1931, xxvi, 102.

ACUTE BENIGN LYMPHOCYTIC MENINGITIS

(ACUTE ASEPTIC MENINGITIS)

BY

W. R. F. COLLIS, M.D., F.R.C.P.
M.R.C.P.I., D.P.H.

PHYSICIAN TO NATIONAL CHILDREN'S HOSPITAL AND PAEDIATRICIAN TO ROTUNDA HOSPITAL, DUBLIN

A type of acute benign meningitis—as distinct from serous meningitis—has been recognized for some years on the Continent and in America. Little mention of the condition is to be found in the medical literature of Great Britain and Ireland, however, and no place has as yet been given it in English textbooks. Hence the cases given below and the following discussion should be of some general interest, as it appears that cases of recovery from a form of meningitis resembling tuberculous meningitis are not too uncommon here.

Case Record

A girl, aged 5½ years, was admitted to the National Children's Hospital on November 10th, 1934, complaining of severe headache and vomiting.

History.—The child had been quite well up to five days previously, when she had complained of headache, which became more severe at times; this was soon accompanied by vomiting, which had become very bad the night before admission, when the patient became delirious. The previous history showed that she had had pneumonia in infancy and whooping-cough two weeks prior to the present trouble. The father, mother, and other children were quite well. The mother stated that one of their children had died three years previously with somewhat similar symptoms, and that the doctor "had called it tetany."

Examination.—On admission the child appeared very ill and lay listless in bed. The temperature was 99.4° F., the pulse 134, and the respirations 30. Circulatory and respiratory systems showed nothing abnormal. There was some rigidity of the back and neck. The knee-jerks were present, but the left one was reduced. The right plantar reflex gave a flexor response, the left an extensor. No ankle-clonus was elicited. The ankle-jerks were present. Kernig's sign was positive on the right and negative on the left. The arm reflexes were not elicited. There was some loss of muscle tone on the left side. The eye movements were normal, the disks were not blurred, and the eye grounds were normal. Special examination of the ears by Mr. Wilson showed them to be perfectly healthy. The Mantoux tuberculin test was negative in a dilution of 1 in 100 old tuberculin. The white blood cell count showed 11,200 total leucocytes, the differential count being as follows: polymorphs 58 per cent., lymphocytes 39 per cent., monocytes 2 per cent., and eosinophils 1 per cent. A table showing the result of the cerebro-spinal fluid examinations is given below.

Date... ...	10/11/34	14/11/34	28/11/34	11/12/34
Protein ... Globulin increase	0.03 gram % —	0.09 gram % Slight	0.015 gram % —	0.015 gram % —
Chlorides ...	0.66 gram %	0.71 gram %	0.72 gram %	0.71 gram %
Sugar ...	—	Diminished	Good reduction Fehling's	Poor reduction Fehling's
Cytology ...	* 2,155 cells per c.mm.	121 cells per c.mm.	9 cells per c.mm.	5 cells per c.mm.
Monocytes	98 %	98 %	—	—
Polymorphs	2 %	2 %		
Z. N. Film	No T.B. seen	No T.B. seen	—	—
Culture	Negative	Negative	—	—
Method of Collection	Lumbar Puncture	Cistern Puncture	Lumbar Puncture	Lumbar Puncture

* The laboratory reports that there is reason to believe that this cell count is slightly too high, due to counting error.

Progress.—The child remained acutely ill for some two to three weeks, a general examination on December 2nd still showing little change: Kernig's sign was markedly positive on right side, less on left; the plantar reflex was still extensor on left. After this, however, the child gradually improved, and by December 14th the Kernig and Babinski signs had cleared up, and the cerebro-spinal fluid was almost normal. Soon she was sitting up playing with her toys. Gradually she made a complete recovery. She has remained perfectly well ever since.

Discussion

At first the diagnosis of tuberculous meningitis was made, and the parents were given a grave prognosis, but as the child improved, and as repeated tuberculin reactions were negative (the Mantoux reaction was repeated after the child had recovered completely and was in good health, and was still negative), and as all examinations of the cerebro-spinal fluid, both by the direct method and by guinea-pig inoculation, never revealed tubercle bacilli, this diagnosis was no longer tenable. It was clear, also, that the case was not one of serous meningitis as described by the otologists, as the ears were normal and the cerebro-spinal fluid was not characteristic of that condition. Nor was any other condition, such as mumps, chicken-pox, measles, influenza, or herpes—which are known sometimes to cause somewhat similar complications—found associated.

We were frankly puzzled, nor did any of the modern textbooks on paediatrics which we had to hand help us in any way (Holt and McIntosh, 1933; Garrod, Batten, Thursfield, and Paterson, 1934; and L. Parsons and S. Barling, 1933). Further study of the literature, however, revealed an interesting state of affairs. During the last twenty years a large number of cases with syndromes closely akin to the case reported above have appeared from time to time under such different titles as "meningiti. sierose e. meningisme,"[1] "benign aseptic purulent meningitis,"[2] "syndrome méninge avec lymphocytie rachidienne d'origine indéterminée,"[3] and "acute aseptic meningitis."[4] Some of the cases varied somewhat in form, as those described by Guillain and Richet[5] in 1910, the condition being associated with jaundice. Indeed, up till 1925 no syndrome which could be definitely felt to belong to a single disease had been clearly demonstrated. Then Wallgren[4] described a small epidemic from Sweden, which he termed "une nouvelle maladie infectieuse du système nerveux central" (méningite aseptique aiguë).

The latter author has summarized the syndrome as follows:

1. There is an acute onset. The patient becomes rapidly gravely ill; symptoms and signs are those of meningitis—for example, vomiting, stiffness of the neck and back, headache, positive Kernig sign, and general convulsions sometimes occur. The eye signs are also variable—nystagmus, squint, photophobia, and papilloedema. Fever is usually present at the start, but the temperature returns to normal before the end of the second week.

2. The cerebro-spinal fluid shows the following features: (*a*) It is sterile. (*b*) There is a great preponderance of lymphocytes—usually 150 to 250—but sometimes more. (*c*) The sugar and chloride content is normal or almost normal.

3. The disease has a short duration, is benign and not followed by complications.

4. Parameningitic conditions, such as otitis, sinusitis, trauma, etc., are absent

5. Other associated conditions, such as mumps, herpes, encephalitis, or infectious diseases (typhoid or influenza), are not found.

Since this important communication was made in 1925 a fairly large number of cases have been described with the same definite syndrome by Anderson and Walff in Sweden[6]; Gibbens in England[7]; Dereux in France[8]; Du Bois in Switzerland[9]; Grun in Germany[10]; Fornara in Italy[11]; Viets and Watts in the United States[12]; and Yoannovitch in Jugoslavia,[13] to mention but a few. In a paper entitled "Acute Aseptic Meningitis" published in September, 1934, Viets and Watts give an able review of the literature, and add a number of cases of their own. Finally they sum up the present position in regard to the question as follows:

"The disease known as acute aseptic meningitis, first clearly described by Wallgren, has now found a well-marked place in medical literature, and should be considered as a clinical entity, as no definite relationship has been shown to exist between it and other diseases."

The case recorded above was brought down to the Royal Academy of Medicine of Ireland, and also described at the 1935 meeting of the British Paediatric Association. At both meetings a number of physicians stated during the discussion that they had seen exactly similar cases from time to time, all of which they had diagnosed as tuberculous meningitis, but about which they later had to modify their opinion when the patient made a complete recovery.

A FURTHER CASE

Recently Professor Synge diagnosed a case which was admitted to the City of Dublin Hospital under his care as one of acute aseptic meningitis, and has given me permission to quote it here.

A girl, aged 9½ years, was admitted to hospital on March 23rd, 1935, giving a three-day history of severe headache and vomiting, which had increased until she was semiconscious. The father had died from meningitis.

Physical examination showed that the pupils reacted sluggishly to light, there was a stiff neck, Kernig's sign was positive, the knee-jerks reduced, and the plantar responses flexor. The ears were carefully examined and nothing abnormal was found. All other systems in the body were normal. The cerebro-spinal fluid showed an increase in globulin, the chloride figure was 720, and the cells 500—mostly lymphocytes and some polymorphs. No tubercle bacilli were found.

Several other lumbar punctures were done. Gradually the child recovered, and was discharged perfectly well one month after admission. Professor Synge stated that the normal chlorides made him first think that the case would probably turn out to be one of acute aseptic meningitis.

Conclusion

It would appear, then, that such cases are by no means medical curiosities, but are of fairly common occurrence. No case has as yet come to necropsy, and the few animal experiments which have been done are not sufficiently conclusive, as yet, to warrant any very definite theory as to the aetiology of the disease.

Eckstein[14] injected three monkeys (into the cisterna magna). One monkey developed fever and became paralysed in the hind legs. Its cerebro-spinal fluid showed a preponderance sometimes of polymorphonuclear cells and sometimes of lymphocytes. The injection of the cerebro-spinal fluid from this monkey into another produced a similar state in the second animal. Du Bois,[9] by injecting albumin into rabbits intravenously, produced a cerebro-spinal fluid characterized by an increase in lymphocytic cells. He suggested that the disease was due to a generalized lesion of the reticulo-endothelial systems. Knauer[15] placed some of the fluid from a patient with the condition on the scarified cornea of a number of rabbits without result, and held that the condition was therefore not due to virus of encephalitis.

It seems, however, that there exists a definite clinical entity which we must conclude is caused by a virus as yet undiscovered, and that as such it deserves a place in modern medical textbooks, particularly as it is apt to be confused with tuberculous meningitis, with the result that a very grave prognosis is given to the relatives, who thereby experience much unnecessary suffering. The title "acute aseptic meningitis" is clearly not too satis-

factory, as the word aseptic would imply no organism or virus as the causal agent. As we have stated above, it is probable that some virus as yet unidentified is the infective factor. Hence the purely descriptive name of "acute benign lymphocytic meningitis" is submitted as a more accurate title for the condition.

Summary

1. Two cases of acute benign lymphocytic meningitis are described.

2. A review of the literature on the subject is given, and a plea is made that the disease syndrome of the condition as described by A. Wallgren in 1925 should be recognized by modern paediatric textbooks.

My thanks are due to Professor V. M. Svnge for allowing me to publish one of the cases, and to Drs. H. L. Parker and A. Wallgren for their help and advice regarding the literature.

References

[1] Fornara, P.: *Communicazione all' XI Congresso Pediatrico Italiano*, Milan, October, 1924.
[2] Schill, E.: *Monatschr. f. Kind.*, 1930, xlviii, 434.
[3] Laubry, Ch., and Fov, G.: *Bull. et Mém. Soc. Méd. des Hôp. de Paris*, October, 1910, p. 230.
[4] Wallgren, A.: *Acta Paediatrica*, 1925, iv, 158.
[5] Guillain, G., and Richet, Ch.: *Bull. et Mém. Soc. Med. des Hôp. de Paris*, October, 1910, xxx, 289.
[6] Anderson, M. S., and Wulff, F.: *Ugeskrift for Laeger*, 1930, xcii, 572.
[7] Gibbens, J.: *Lancet*, 1921, ii, 12.
[8] Dereux, J.: *Journ. de Méd. de Paris*, January 15th, 1931, p. 80.
[9] Du Bois: *Rev. Méd. de la Suisse Romande*, 1931, li, 617.
[10] Grun, R.: *Deut. Arch. f. klin. Med.*, 1932, clxxii, 429.
[11] Fornara, P.: *Est. d. Rivista Ospadaliera*, 1926, xv, 19.
[12] Viets, H. R., and Watts, J. W.: *Journ. Nerv. and Ment. Dis.*, September, 1934, lxxx, No. 3, 253.
[13] Yoannovitch, G.: *Bull. Off. Internat. d'Hyg. Publique*, April, 1931, p. 675.
[14] Eckstein, A., Hottinger, A., and Schlerssing, H.: *Zeit. f. klin. Med.*, 1932, cxviii, 97.
[81] Knauer, H.: *Klin. Woch.*, March 12th, 1932, Part I, p. 449.

ACUTE FREE PERFORATION OF THE GALL-BLADDER

BY

A. L. D'ABREU, M.B., CH.B., F.R.C.S.

SENIOR ASSISTANT IN THE SURGICAL UNIT, THE WELSH NATIONAL SCHOOL OF MEDICINE, CARDIFF

The expectant or delayed treatment of acute cholecystitis, whereby operation is postponed until the acute inflammatory phase is over, gives such excellent results that there is a danger of its being adopted too complacently. In unfavourable cases suppuration and gangrene may be followed by perforation of the gall-bladder, leading to fistulous communication with other viscera, such as the stomach, duodenum, small intestine, colon, or rarely the lung, or to the formation of a pericholecystic abscess, or to a general flooding of the peritoneal cavity by bile. Acute free perforation of the gall-bladder is the description applied to this last catastrophe.

Free extravasation of bile is held to be uncommonly rare; it has, however, been noted three times in the last 116 cases of gall-bladder disease met with in this unit at operation or at post-mortem examination (cases diagnosed as cholecystitis but not confirmed by operation have been excluded). This seemingly high incidence is supported by figures from other clinics, mostly American, and will be discussed later: in the same series of 116 cases perforation with the formation of a localized abscess was noted once, while no case of fistulous communication occurred.

CASE I.—*Rupture of Gall-bladder: General Biliary Peritonitis: Drainage and Ileostomy: Death*

A man, aged **57**, was admitted to the Surgical Unit on January 4th, **1930**, as an emergency; he was almost moribund, and unable to give a coherent history. A recent recurrence of a right inguinal hernia, which had been operated upon seven years previously, had been followed two days before admission by sudden generalized abdominal pain and vomiting; his doctor found and reduced a large swelling in the scrotum, but without relieving his symptoms; he was therefore sent to hospital, extremely ill, pale, and collapsed, with a subnormal temperature and a pulse of **62**. The abdomen was immobile and retracted, with generalized rigidity and tenderness; no abnormal dullness was detected. A right inguinal hernia was reduced with ease; a diagnosis of general peritonitis having been made, Mr. Lambert Rogers opened the abdomen by a right paramedian incision; bile-stained fluid was encountered, but the rupture in the gall-bladder was not easily seen. The intestines were reddened and very distended. As the patient's condition was so bad an ileostomy was rapidly done and the abdomen closed with appropriate drainage. The patient died the same day.

Necropsy.—Old perihepatitis was present; the gall-bladder showed an acute free perforation of the fundus; there were no gall-stones present, and the common bile duct was patent. Rupture had occurred in an inflamed gall-bladder.

CASE II.—*Acute Calculous Cholecystitis: Rupture: General Biliary Peritonitis: No Operation: Death*

A pensioner, aged **75**, was admitted to the Surgical Unit as an emergency on September 5th, **1934**. Twelve days before admission the right leg had swollen, and phlebitis had been diagnosed. Nine days later, following an acute attack of upper abdominal pain, he became cyanosed and very short of breath. In view of his age and the existence of arteriosclerosis, a cardiac condition was held to be responsible for the symptoms. The pain gradually subsided, but later returned. He vomited twice on the day before admission. There was no jaundice and no urinary disturbance.

On admission he was flushed, restless, and cyanosed, with a temperature of **99.8°** F., a pulse of **140**, and respirations **40**. The tongue was heavily coated; the left ankle was swollen and tender. The abdomen did not move on respiration, and showed some rigidity on the right side; tenderness was general. No masses nor any visceral enlargements could be felt, and the liver dullness was normal. Tenderness was not more marked over the gall-bladder or appendix than elsewhere. The heart was normal in size, but the pulse was irregular. Rhonchi were heard all over the lung fields; the urine contained a haze of albumin. In consultation with my senior colleague, Mr. Lambert Rogers, a provisional diagnosis of acute pancreatitis was made. Following the teaching of the late Mr. John Murray, cases of that disease had been treated in this unit by conservatism in several instances with success, and in view of the age and extremely precarious condition of this patient operation was withheld. Small doses of morphine and atropine, combined with continuous rectal saline and glucose, were given. The next day the patient showed some clinical improvement; the pain and rigidity were less. On the following day, however, the patient collapsed and died.

Necropsy.—A general peritonitis associated with free bile and gall-stones in the peritoneal cavity was present. A small contracted gall-bladder, containing many stones, was gangrenous and had perforated; there was recent perihepatitis; the liver showed a fine cirrhosis; the myocardium showed fibrous replacement; and there was a bronchopneumonia of both lungs.

CASE III.—*Calculous Cholecystitis: Acute Free Perforation of the Gall-bladder: General Peritonitis: Cholecystostomy: Recovery*

A married woman, aged **71**, was admitted on November **27th**, **1934**, as an emergency. A week before admission she suffered suddenly with severe colicky pain in the upper abdomen on the right side, and vomited; the pain persisted. She was an enfeebled old lady who gave a poor history. On admission she looked ill and in much pain, with a temperature of **100.6°** F., pulse **88**, and respirations 22. The abdomen was well covered with fat. Tenderness and rigidity were marked in the right hypochondrium, but no mass could be felt.

A diagnosis of calculous cholecystitis was made, and conservative treatment, including the Fowler position, morphine and atropine, and continuous rectal saline, was employed. On the following day the condition was worse: the tempera-

ture was 102°, the pulse 108, and she perspired freely ; the abdominal pain and rigidity were now generalized, and a diagnosis of perforation of the gall-bladder was made. An immediate operation under ether and oxygen was done, and the abdomen opened by a right paramedian incision. On opening the peritoneal cavity bile-stained fluid at once escaped, and was seen to be oozing from the region of the gall-bladder, which was small and shrunken, and although completely free from omental adhesions was difficult to find. Many small black faceted stones were lying free in Rutherford Morison's pouch ; the perforation was found in the region of the junction of the cystic duct with the gall-bladder ; a large stone was present in Hartmann's pouch. The gall-bladder was freely opened, all stones removed, and cholecystostomy performed ; a further drainage tube was placed in Rutherford Morison's pouch, and after the free bile had been mopped out as far as possible the abdomen was closed in layers.

For three days the patient remained critically ill, but gradually improved ; bile drained freely for three weeks ; the tube in the gall-bladder was then removed, and in a week the wound healed and the patient was discharged.

In an attempt to assess and tabulate the features of this condition, a brief examination of the incidence (according to numbers, sex, and age), of the aetiology and pathology, and of the clinical features may be of value.

The Incidence

Turner[1] says that "Perforations of the gall-bladder are generally unsuspected rather than unusual." In a personal communication Mr. Turner tells me that he refers rather to those cases in which bile is found in localized collections around the diseased gall-bladder than to acute free biliary peritonitis. Although most of the recorded cases of free perforation occur in the American literature, Fifield[2] published an important paper in 1926 on perforation and rupture of the gall-bladder occurring twenty-eight times in 1,066 cases of biliary disease ; in four of these cases bile and calculi were found in the peritoneal cavity, while in fifteen diffuse peritonitis was present ; in two of the latter group, however, the peritonitis was subsequent to the formation of local subhepatic abscesses, and cannot therefore be truly called free perforation. One of the cases was due to trauma. Niemeier[3] describes a case of free perforation and summarizes others in the literature, notably six recorded by Mitchell out of 1,270 gall-bladder operations, and eight out of 1,000 biliary cases recorded by Alexander. He quotes Judd's figures, in which two acute free perforations occurred in 9,446 gall-bladder operations, but that three others occurred in patients too ill for surgery of any type. Judd, however, pointed out that his figures probably underestimated the occurrence of free perforations, because, owing to non-accessibility, not many acute cases were seen. Niemeier further records that in addition to his own case two acute free perforations occurred at his hospital out of 349 operations. Lipshutz[4] speaks of three post-mortem cases in which the condition had been undiagnosed during life, and of four cases described by Mentzer that were unrecognized in a medical service and succumbed.

It must be clearly understood that these cases were free perforations ; many more were recorded in which the gall-bladder perforated and led to a subhepatic abscess. Nor is any claim made that a complete account of all cases in the literature has been presented ; the cases quoted, however, are numerous enough to indicate that in large series of gall-bladder cases free perforation is a complication not to be dismissed as being trivial in incidence.

Age and Sex Incidence

Free perforation occurs most commonly in the elderly ; the reason for this will be discussed with the pathology. The ages of the three patients whose cases are recorded here were 57, 75, and 71. In the cases recorded by the authors mentioned above a similar age incidence was noted, although perforation has been recorded in quite young patients, Power and Johnson (quoted by Eliason and McLaughlin[5]) having described the rupture of an empyema of the gall-bladder containing *Ascaris lumbricoides* in a child aged 2½ years ; the same authors found the average age to be 53.7 years. It would be tedious to enumerate statistics from other writers, for the conclusion that perforation is far commoner after than before or during middle age is reached by all. It is interesting to remember that torsion of the gall-bladder also occurs usually in the elderly (Rendle Short and Paul[6]), and, in common with cases of perforation, presents mystifying features and signs that may cloud the diagnosis.

In Fifield's paper perforation was a little commoner in women than in men, whereas in Alexander's paper[7] six were males and two were females.

Pathology and Aetiology

Trauma, typhoid fever, and the presence of *Ascaris lumbricoides* are rare causes ; inflammatory disease of the gall-bladder associated with calculi is undoubtedly the commonest condition. Although extensive gangrene of the wall associated with empyema has occurred in some cases, it is by no means always present. Gangrene was demonstrated in Case II recorded above, but not in the other two cases ; in the patient who survived, the rupture in the gall-bladder was found with difficulty, there being no very obvious patch of gangrene or ulceration. Where a stone is impacted in the cystic duct or the neck of the gall-bladder a rise of tension due to inflammatory or mucous exudates is badly borne by a hollow viscus which has been weakened by previous fibrosis. Muscle hypertrophy does not occur in the obstructed gall-bladder, in contradistinction to other viscera, such as the urinary bladder, colon, and stomach, and this further contributes to the lack of elasticity in the sac damaged by cholecystitis, whether calculous or not. Stones may lead to local ulceration and thrombosis of vessels, and must be in some cases an important factor in acute free perforation. Cope,[8] in a Hunterian Lecture, described an interesting series of biliary extravasation in which no obvious rupture of the gall-bladder could be demonstrated: he thought that minute perforations had occurred, bile had escaped, and the openings had then closed. He pointed out that bile is secreted at low pressure, and that in the absence of obstruction the biliary system rapidly heals its fistulae, as after choledochotomy. That large perforations may occur and then close spontaneously is proved by the occasional finding of gall-stones in the general peritoneal cavity (Grey Turner[9] and Eliason and McLaughlin[10]).

Age is a factor of great importance in the aetiology of free perforation. Is this due to abeyance of omental function? Acute appendicitis in old age, as in infancy, is peculiarly dangerous, because the omentum rarely hurries down to perform its all-important function as the "abdominal policeman," and fails to shut off the inflamed area ; so, too, in some cases of acute gall-bladder disease in the elderly.

Torsion of the gall-bladder may be followed by free perforation, as in Wendel's case, mentioned by Fifield and Short and Paul. The administration of cathartics in acute calculous cholecystitis with an empyema or mucocele present has been blamed as a factor in the causation or precipitation of rupture (Bailey and McNeill Love[11]).

Clinical Features and the Diagnosis

A characteristic syndrome does not exist: few cases appear to have been diagnosed before laparotomy: acute cholecystitis, perforated gastric or duodenal ulcer, acute appendicitis, acute pancreatitis, and intestinal obstruction have been simulated on several occasions. Bile leakage

into the peritoneal cavity is not so irritating as gastric fluid, and the typical rigidity expected is by no means constant. The safest guide to correct diagnosis lies in ceaseless vigilance when acute cholecystitis is being treated expectantly, especially in elderly patients ; a rise of pulse rate associated with an increase in the area of abdominal tenderness must not be neglected. It is therefore more satisfactory that cases of acute cholecystitis should be under constant supervision in a hospital or nursing home ; the perforation of a gall-bladder does not present the dramatic picture seen in other causes of visceral leakage, and the insidious but relentless onset of general peritonitis is readily overlooked, and accounts for a mortality of over 60 per cent. A similar danger has been described by Rendle Short and Paul in cases of torsion, which occurred mainly in patients who were elderly and presented atypical signs of acute cholecystitis. When, therefore, uncertainty exists about the condition of a patient being treated expectantly for acute cholecystitis, laparotomy is desirable. Perforation can occur in a patient confined strictly to bed and on a fluid diet, as in Case III recorded here. A negative feature of interest is that jaundice as a symptom scarcely appears in the recorded series, and the condition, therefore, is rare in cases of stone in the common bile duct.

Treatment

Early diagnosis and immediate laparotomy, as in other perforations, is, of course, the main principle. One's surgical instincts suggest cholecystostomy as being safer than cholecystectomy: at operation, as in the successful case recorded here, there may be considerable difficulty in finding the small, contracted gall-bladder. The peritoneal cavity is gently mopped out with moist packs ; drainage of the pouch of Douglas in the vain hope of anticipating suppuration and collections of pus there has little to recommend it ; a drainage tube in the pouch of Rutherford Morison above the right kidney is of value.

It is difficult to agree with Lipshutz[4] and others that the ideal treatment of all cases of acute cholecystitis is immediate operation to prevent the onset of gangrene, suppuration, and rupture. Such a routine would probably raise considerably the mortality rate of biliary operations, and the saving of the occasional case of rupture would be offset by the general increase in deaths. The general opinion of the delayed treatment of acute cholecystitis is that the results are good provided the dangers of complications are constantly remembered and vigilantly looked for.

Finally, in the prophylaxis of this condition we must remember that most cases occur in gall-bladders the seat of chronic calculous disease ; the continuation of the surgical advice that in the absence of contraindications diseased gall-bladders should be removed seems, therefore, justified in the effort to prevent this and other serious complications.

Summary and Conclusions

1. Acute free perforation of the gall-bladder is commoner than is usually thought. Three cases occurring in a series of 116 proved instances of biliary disease, and further instances from the literature, are reported to emphasize this fact.

2. The incidence and the pathology and aetiology are discussed.

3. The clinical features are atypical, and a correct diagnosis is rarely made before operation ; laparotomy is urged in cases that cause continued anxiety after ordinary expectant treatment of acute cholecystitis, especially in the elderly.

4. Treatment, both prophylactic and in the fully developed condition, is discussed.

I am grateful to Professor A. W. Sheen, director of the Surgical Unit, for his encouragement and for allowing me free use of the unit records ; and also to Professor Lambert Rogers for his help and for allowing me to make full use of consultations with him.

References

[1] Turner, P.: *Clin. Journ.*, 1935, lxiv, 143.
[2] Fifield, L. R.: *British Medical Journal*, 1926, ii, 635.
[3] Niemeier, O. W.: *Ann. of Surg.*, 1934, xcix, 922.
[4] Lipshutz, B.: Ibid., 1935, ci, 906.
[5] Eliason, E. L., and McLaughlin, C. M.: Ibid., 1934, xcix.
[6] Short, A. Rendle, and Paul, R. Gordon: *Brit. Journ. Surg.*, 1934, xxii, 301.
[7] Alexander, E. G.: *Ann. of Surg.*, 1927, lxxxvi, 705.
[8] Cope, Zachary: *Brit. Journ. Surg.*, 1925, xiii, 121.
[9] Turner, G. Grey: Personal communication.
[10] See Reference 5.
[11] Bailey, H., and Love, R. J. McNeill: *A Short Practice of Surgery*, London, 1935, p. 264.

Clinical Memoranda

Brain Abscess following Acute Otitis Media in a Child with Chronic Nasal Sinus Disease and Acute Nephritis: Operation: Secondary Encephalitis: Recovery

The following case shows some features of special interest: (1) acute otitis media in a child, apparently secondary to chronic maxillary antral disease ; (2) acute nephritis, yielding to operative treatment of the otitis ; (3) brain abscess following *acute* otitis media ; (4) recurrence of cerebral symptoms six weeks after drainage of abscess, apparently from secondary encephalitis, and ultimate complete recovery ; (5) although there was headache (never very severe), vomiting, and drowsiness, there was never a subnormal temperature or slow pulse, even with half-hour counting, nor papilloedema, and the wasting was only what one would expect on a diet of glucose for weeks on end. I regard it as important that the brain dressing was left unchanged until the smell made a dressing imperative, and that the cerebellar hernia was ignored until it subsided.

Case Record

A boy aged 8 was brought to me on March 21st of this year with pain and discharge in the right ear, of recent appearance ; the mother was sure he had never had ear disease before, but "his nose is always blocked with thick discharge." I confirmed the last observation, made a diagnosis of chronic maxillary sinus disease, and had a skiagram taken which showed both antra opaque. For the ear I ordered magnesium sulphate powder and arranged to remove adenoids and treat the sinusitis as soon as the acute phase of the otitis had passed. I did not see the boy again until April 4th, when I was called to him in the Royal Infirmary. He had been admitted on March 30th to the medical side under Dr. R. C. Clarke for acute nephritis, the first symptoms of which had appeared on the 28th. The right ear had ceased to discharge, but the left ear ached and began to discharge the day before admission ; on the day of admission he was feverish, somewhat drowsy (but quite sensible), and had vomited once ; no rigor. The day before I saw him again—that is, April 3rd—he had complained of pain in *left* ear, and hydrogen peroxide drops had been ordered ; the haematuria was unchanged, the temperature was rising a little (100° at start, 101.4° then), pulse 130, respirations 34 ; no pain, no headache, no further vomiting, taking fluids well, quite bright.

Without any warning at 6 p.m. on April 4th he had become unconscious, with twitching of right side of face and right arm ; pupils dilated, equal, fixed, fundi normal ; knee-jerks equal and normal, plantars flexor. I saw him at 9 p.m. quite unconscious, preferring to lie on his right side ; no manifest paresis, but right eye not so firmly closed as left, and right arm not moved as freely as left ; no twitching ; no nystagmus ; pupils small, equal, and reacting to light ; knee-jerks: right increased, left normal ; plantar reflexes:

right extensor, left flexor; right arm and leg slightly flaccid, right corner of mouth weak, no abdominal reflex, no "tache," no rigidity of neck, no incontinence. The left ear had a little debris, deeply stained with mercurochrome, at the fundus, but no free discharge; slight mastoid oedema, and firm pressure over the mastoid was resented—he squirmed, but did not cry out. Diagnosis: probably left temporo-sphenoidal abscess with irritation of Rolandic cortex at start, and now oedema affecting internal capsule.

At 9.40 that evening I carried out a simple (Schwartze) mastoidectomy. Extraosseous tissue normal, cellular type of mastoid, bone engorged, no pus in most of the cells, but a few drops in the antrum. Dura of temporo-sphenoidal lobe exposed; apparently normal, but in an area about 2 cm. across, immediately above the attic, it felt soft and flabby, as if not supported by brain, and was yellowish. The attic itself was extensively diseased, and disease extended into the root of the zygoma; the dura was adherent over the tegmen, but no abscess stalk could be found. The dura was incised over the flabby area, and 12 c.cm. of brownish, thin pus escaped (not offensive); the brain was seen to be concave at this point, but rapidly expanding; it was dressed with glycerin-gauze strips over rubber dam through the opening in the dura, and the aural wound dressed, with drainage.

April 4th: He became conscious at 2.30 p.m., asked for drink (and promptly vomited it); no headache. Next day taking fluids well, headache if he sits up; urine still loaded with blood.

April 10th: Only trace of blood in urine; temperature 100°, irregular; still feeding entirely on orange juice and glucose; very hungry, no headache, bright and happy; dressings getting offensive. April 11th: Dressings changed for the first time; whole area bathed in stinking pus, and granulating nicely. He continued thus for a month, generally very well, hungry, bright, and without cerebral symptoms, except that he was inclined to have a nap during the day as well as sleeping all night. The wound cleaned up well, and the urine was free from blood and from albumin; very constipated; still on fluids only. The temperature was irregular, about 100°. On May 7th he was nauseated, and then vomited once; on the 11th he vomited twice, each time with nausea, and after this had some headache, but was quite happy and jolly; solids allowed. On May 20th the temperature, which had been normal from the 15th to the 18th, rose a little; he had left frontal headache and anorexia; trace of albumin in urine. On the 21st he vomited suddenly in the evening, and did not want to talk to his mother. On the 23rd he vomited after breakfast; quite jolly during morning, went to sleep at 11 a.m.; for first time fine horizontal nystagmus to left on looking to left, coarser to right on looking to right; tends to point to left with right hand, left hand normal; no ataxia; feels giddy as he lies in bed—"things go round" (can't say which way). Right temporal headache. Temperature 97°, pulse 80, respirations 20. May 24th: Vomited last night, not to-day; although temperature, pulse, and respirations were normal, appetite fair, only trace of albuminuria, the general condition is obviously worse—won't talk or play, looks "really ill," drowsy. Right frontal headache, fine nystagmus to right (only). Wound almost healed. Consultation with Dr. Clarke: decided that although the prospect was very poor we ought to re-expose the brain—no guidance as to part affected, might be cerebellar.

Under general anaesthesia I exposed the left temporo-sphenoidal lobe and explored it for an abscess, without result; the condition became very poor, so intravenous glucose was given, and the cerebellum was rapidly explored, with no better result. The operation had to be terminated quickly. Dressings of brain as before, but this time two drainage tubes were left in cerebrum and two in cerebellum. Next day temperature 103°, definitely brighter. May 26th (two days after second operation): temperature still up, but he is bright, no headache, eats solids well. He vomited once on the 29th, and was drowsy on the 31st. Most of the left lobe of the cerebellum herniated. Urine: much albumin, trace of blood. Reads paper, doing jigsaw puzzle. From that point he has not turned back. The cerebellum consented to retire within the skull again, and the large granulating area was skin-grafted under local anaesthesia (he was very interested in this).

To-day he is perfectly fit, and at school; he has a large scar, but no pain or discomfort; both ears are dry, though the left is rather deaf; there is no albuminuria; and, curiously enough, the old-standing nasal discharge has disappeared.

E. WATSON-WILLIAMS, Ch.M.,
Surgeon in Charge, Ear, Nose, and Throat Department, Bristol Royal Infirmary.

Treatment of Oculogyric Crises of Encephalitis Lethargica

One of the most typical and also most distressing symptoms of a well-established case of encephalitis lethargica is what are known as oculogyric crises. They consist of "recurring attacks of tonic conjugate deviation of the eyes, most commonly upwards. . . . The attacks may last from a few seconds to four hours or more, and may occur frequently or at intervals of several days" (Price's *Practice of Medicine*). As I believe that there is no treatment which is recognized to have any beneficial effect on these attacks, the following case record may be of interest.

The patient, a wood machinist, at that time aged 43, first consulted me for "nerves" in March, 1927. He has been under continuous observation and treatment since then. When first seen he barely suggested an early case of Parkinson's disease, but as the years have passed the typical mask, spasticity, etc., have appeared. Until two years ago he regularly took parathyroid gland every morning, and also a mixture containing hyoscine hydrobromide, at first 1/80 grain per diem, slowly increased until now he gets 1/40 grain daily. He continued at work until the summer of 1933, when in the hot weather he developed an intractable diarrhoea, which much weakened him, and he has been very liable to diarrhoea ever since.

His oculogyric crises probably began some time in 1933, though I did not become aware of them until the end of September, by which time they were fairly severe. For example, in November, 1933, he had nine attacks, of which more than half lasted over an hour. The attacks continued until July, 1934, usually one or two a week and of varying severity, though seldom for less than half an hour. On July 6th, having observed the beneficial effect of prominal (Bayer) on various types of tremor, as an experiment I gave the man some and told him to take a 3-grain tablet each morning, avoiding any suggestion of what the tablets were expected to do. To my surprise he did not have another oculogyric attack for exactly nine weeks, and this attack only lasted for fifteen minutes. A week later, September 13th, he had another attack for fifteen minutes, and on October 4th his wife fell downstairs and he had a further slight attack. Slight attacks occurred since then on the following dates: October 11th and 17th, November 1st (bad attack at night) and 22nd, December 15th and 18th (had also bad diarrhoea on these two dates), January 24th, March 4th and 21st (when overdone after a long walk), April 4th, May 6th and 7th (bad attacks during Jubilee excitement), June 7th (three-quarters of an hour), July 1st, 4th (three-quarters of an hour), 22nd, and 25th (three-quarters of an hour), and 30th, August 19th and 29th, October 10th and 24th. From the middle of July he was taking half a tablet at night and one in the morning.

This record at least suggests that prominal has had a beneficial effect on the frequency of the oculogyric crises in this case. It is unlikely that the effect is due to suggestion, for the attacks decidedly tended to become more frequent in the summer, as one might anticipate from the onward march of the disease, while increasing the daily dose from 3 grains to 4½ grains seems definitely to have diminished the frequency of the attacks once more. It appears to be a line of treatment worthy of further trial, for if it does nothing else it tends to make the patient more comfortable, or at least less aware of his miseries.

Winsford, Cheshire. W. N. LEAK, M.D.Camb.

Reviews

SIR DONALD MacALISTER

In *Sir Donald MacAlister of Tarbert*[1] his widow, in clear and simple language, records the remarkable achievements of a man whose infinite variety, ability, and power of application would have taken him to the top of any profession he had chosen. As a matter of fact he had decided on medicine before he was 18, and before he went up to St. John's College, Cambridge, with an Exhibition. He had already obtained high honours when at the Liverpool Institute, such as Exhibitions at Balliol and Worcester College, Oxford. So equally balanced was his early distinction in mathematical sciences and classics that he "tossed up, and it came down heads for Cambridge," and thus he arrived at a decision he never regretted. In 1872, when receiving a number of prizes at the Liverpool Institute from Sir John Duke Coleridge, afterwards Lord Chief Justice, he was urged by that eminent lawyer to enter the legal profession; but his mind was already made up. His colleagues thirty years later on the General Medical Council, when wondering at the effectiveness of his dealings with the wiles of counsel, fully realized what they had gained and what the legal profession had lost.

As senior wrangler in the mathematical tripos of 1877 MacAlister was the second to become a member of the medical profession; the other—Henry Ainslie of Pembroke, in 1781—was afterwards physician to Addenbrooke's Hospital, and then to St. Thomas's Hospital. Before the result of the tripos was declared Montagu Butler had prophetically secured his services at Harrow as mathematical master. This, however, was but a short interlude, and while lecturing at St. Bartholomew's Hospital on natural philosophy he was a clinical clerk in the wards and undertook a good deal of literary work for the *Times*, the *Pall Mall Gazette*, and the *Journal of Education*. After working at physiology with Karl Ludwig at Leipzig he returned to England to be house-physician at St. Bartholomew's. This, however, was not to be, and probably it entirely changed his future. He might well have become a leading consultant in London; as it was, he returned to Cambridge and a busy but mainly academic life, becoming physician to Addenbrooke's hospital, dominant at the Medical Board, and Assessor to the Regius Professor of Physic. His disappointment in not being appointed to the Regius chair in 1892 is briefly recorded. In his early days an ardent Gladstonian he was twice invited to stand for Cambridge in the Liberal interest; but he had little political ambition, and later, when Principal of Glasgow University, very few knew what his political views were.

With his somewhat reluctant acceptance of the Principalship in 1907, a new chapter of MacAlister's life opened. Three years before this he had been elected President of the General Medical Council, an office which he discharged for the record time of twenty-seven years in a manner well described by his successor in that chair, Sir Norman Walker. The striking services he rendered to the University of Glasgow while Principal and Vice-Chancellor were rightly recognized by election as Chancellor in 1929, and were described by Sir George Newman as "beyond calculation." They are more fully analysed here by Sir Robert Rait, his successor. Some of the most remarkable points about this outstanding member of the profession were the equanimity with which much physical suffering was concealed when he was busy and apparently free from any discomfort, his extraordinary gift of tongues, and his varied activities outside his numerous duties. HUMPHRY ROLLESTON.

[1] London: Macmillan and Co., Ltd. 1935. (Pp. 392. 12s. 6d. net.)

THE ART OF PROGNOSIS

Among the questions presented to the medical practitioner none has a more anxious quality than the patient's desire to know what the future, as related to his present illness, may be expected to bring to him—if recovery, as is to be hoped, when, and to what degree? The answer may have a highly important bearing on plans for the patient's future, and it concerns in a large measure the repute of the practitioner as a medical adviser. Admittedly, precise and confident rules are in this branch of the medical art impossible, and success is born only of experience. Experience to the individual comes but slowly. He may, however, be helped by a study of the experiences of his colleagues, and especially of his senior colleagues. It is help of this order that is provided in the *Lancet's* volume on *Prognosis*.[2] This contains some seventy articles, and an indication of its scope may be found in the fact that the first chapter deals with prognosis in carbuncle and the last with prognosis in orthostatic albuminuria, while between these extremes are many topics, some familiar, others of only occasional clinical occurrence; and the writers speak of events which are known to them in the shape of multiplied personal experiences.

There is a classical aphorism that even experience is fallacious, and this in regard to prognosis must certainly be allowed. None the less, if not an infallible guide, it is the best guide at our disposal, and the *Lancet's* chapters afford the opportunity to the individual practitioner to enlarge his own views by learning the views of clinical observers who have enjoyed and utilized long and numerous opportunities. Two features in particular may be noted as emphasizing the value of the volume. First, each article deals with a limited and definite question, and to this the author addresses himself in terms as precise as circumstances admit. Yet discussion rather than dogmatism is the prevailing note, and the chapters cultivate education and judgement, not a slavish obedience to rules. A second helpful feature is that without straying unduly from the question of prognosis the several contributors recognize that before judgement on the future, comes accurate observation on the present, and they therefore remark on various points which indicate that without accurate diagnosis the venture of prognosis is a dangerous one.

The Editor in his preface justly remarks that there is a particular value in the chapters dealing with relatively uncommon clinical disorders—as, for example, Raynaud's disease, where, in an average practice, experience is too limited to justify a confident estimate of the outlook. Further, it may be allowed that prognosis in general is often inadequately considered in many textbooks, and as compensation for this defect, as well as for its particular merits, the *Lancet's* volume must be received as a serviceable contribution to a difficult but necessary subject.

A TEXTBOOK OF GENERAL BACTERIOLOGY

Only three years ago the tenth edition of Professor EDWIN O. JORDAN'S *General Bacteriology* was reviewed in these columns. The appearance of a new edition[3] after so short an interval of time is evidence, not only of the rapidity with which the science of bacteriology advances, but also of the popularity which this book has so deservedly attained. The eleventh edition retains in the main the lay-out of its predecessor. A new chapter appears on that important topic bacterial variation, and several chapters—those on the Rickettsia, filterable viruses,

[2] *Prognosis. Vol. I.* London: The Lancet Ltd. 1935. (Pp. 372. 10s. 6d. net.)

[3] *A Textbook of General Bacteriology.* By Edwin O. Jordan, Ph.D. Eleventh edition, entirely reset. Philadelphia and London: W. B. Saunders Company. 1935. (Pp. 825; 202 figures. 25s. net.)

streptococci, Salmonella, Brucella, and spirochaetes—have been materially altered or added to. Moreover, some regrouping of chapters has been made so as to bring closer together accounts of allied micro-organisms. Whichever section one turns to one finds that the latest work has been incorporated at a just valuation. Felix's work on the Vi antigen of *B. typhosus*, the types of *C. diphtheriae*, and the recent work of Laidlaw and his colleagues on influenza, for instance, are all discussed in their respective sections. It is interesting to note that influenza appears among the diseases of uncertain causation, whereas the common cold is boldly transferred to the virus section: not everyone, perhaps, would agree with this. And, incidentally, a slight error has been committed in the chapter on diseases of uncertain origin, for the account of trachoma virus ends with a paragraph (page 668) which belongs to the mumps section. However, it is only minor points such as these which we find to criticize in this excellent book.

THE PROPER STUDY OF MANKIND

Woman's Mysteries. Ancient and Modern[4] is by Dr. ESTHER HARDING, who interpreted Jung to us in *The Way of All Women*. It is therefore not merely one of the glut of recent books about Woman. It is a scientific and very well informed study and interpretation of the ancient myths about the moon, with their development into organized religions, during the Sumerian, Chinese, Babylonian, Egyptian, and Christian civilizations. Dr. Harding's thesis is that, since these myths were projections of primitive man's feeling on the instinctive plane—in other words, expressions of his deepest psychological experiences—they contain universal truth, and will repay examination in our own efforts to understand the subconscious depths of the same human nature.

In the historical section Dr. Harding traces sexual taboos to the taboo of the menstruating woman. Primitive man feared sex in woman because of its irresistible power over him, and feared her creative function because of its mystery. Her cycle and that of the moon seemed to correspond. The moon's light was believed to be the source of fertility, and she became the Magna Dea, the Great Mother. In the Isis and Osiris cult the author finds an amazingly full illustration of her thesis, and points out that the records give a picture of the transition from the primitive nature worship of a period before 3000 B.C. to the mystery instruction for those initiated into the religion of Osiris during the early Dynastic Period in the Book of the Dead ; and, finally, the hidden spiritual meaning of the mysteries as understood by Plutarch in the early Christian era. There is repetition in this section, some of which might be reduced. Points in Hinduism are correlated, but seem to interest Dr. Harding less. About one point in Mohammedanism she has evidently been misinformed. Ramadan does not take place in June at the dry season, as a survival of mourning of Ishtar for Tammuz, of Aphrodite for Adonis. It connects with the Jewish fast, but only by emphasis on its difference. Mohammed first ordered it in October, and as it follows the lunar calendar it occurs during different weeks each year, traversing all the seasons during the course of thirty-three years.

Using Jung's theories all through, Dr. Harding works out the correspondence between the Eros principle and the implications of the moon goddess legends and worship. If some of the interpretations seem fantastic, as do some modern dream interpretations, nevertheless there is much material for humble search after forgotten facets of universal truth, and many pointers to happier spiritual adjustments. Dr. Harding has succeeded in applying a mass of anthropological information to the scientific study of present-day psychological problems. The book contains real light and leading, and is full of deep interest to any modern man who concerns himself with the proper study of mankind. If that study be Man, or, as in the corrected aphorism, it be God, the study of the subconscious tends to the revelation that, in the deepest of his being, man is himself divine.

[4] *Woman's Mysteries. Ancient and Modern.* By M. Esther Harding, M.D., M.R.C.P. London: Longmans, Green and Co. 1935. (Pp. 342 ; 47 figures. 10s. 6d. net.)

THE CERVIX UTERI

Dr. FRANCIS MATTERS has written a book on *The Cervix Uteri*.[5] He has divided it into four chapters, of which, as he himself suggests, the chapter on the pathology of the cervix uteri is by far the most important. In this he deals with the possible aetiological factors involved in cancer of the cervix: among them the most interesting is the suggestion that cervical lacerations provide continuous stimuli to the anterior lobe of the pituitary gland, and this might account for increased prolan. He further quotes a number of experiments in which rats were injected with prolan and all these rats showed some degree of hyperplasia of the cervix. He states: " It is therefore considered that in these cases the combination of trauma and the stimuli arising from the continued injections of prolan has provoked the formation of neoplastic tissue, which resembles cancerous tissue." It is further suggested that there is an excess of prolan in all cases of carcinoma of the cervix and that this gives a slight positive Aschheim-Zondek reaction, so that if this test is positive in a patient who is not pregnant it should be regarded as pointing to a precarcinomatous condition.

The first part of the book deals with the physiology and endocrinology, and the latter part gives a brief outline of the treatment of some of the pathological conditions found. The book is written in a clear style. There is a certain amount of repetition, but no doubt this is done for emphasis.

ORIGINS AND DEVELOPMENT OF APPLIED CHEMISTRY

The title of Professor PARTINGTON'S work[6] although true is perhaps an inadequate description of the character of its contents ; the work is in fact an exhaustive treatise on archaeological chemistry, for chemistry is the term by which it is rightly named, notwithstanding that the theories of ancient times were not the theories of modern chemical science. The first impression resulting from its perusal is one of amazement at the fact that a man engaged in the duties of an active professor of chemistry could have found time to prepare a work of such a monumental character. It might have been thought that the compilation would only have been possible to one who had retired from his active duties, but as the author remarks in his preface the book could hardly have been written in England outside of London. At all events, it is clear that this field must have been one of life-long interest to the author. Criticism of the work at this stage would be presumptuous ; appreciation of its value can only attain its due proportion among those who will use it largely for purposes of research, and then only after they have found at length how complete a compendium it is of existing documented information. That

[5] *The Cervix Uteri. With Special Reference to the Development of Cancer.* By R. Francis Matters, M.D., M.S., F.R.C.S.Ed., F.R.A.C.S., M.C.O.G., D.G.O. Adelaide: The Hassell Press. 1935. (Pp. 197 ; 53 figures.)

[6] *Origins and Development of Applied Chemistry.* By J. R. Partington, M.B.E., D.Sc. London: Longmans, Green and Co. 1935. (Pp. 598. 45s. net.)

such should prove to be the case can hardly be doubted. The great advances made in recent times in archaeological exploration have furnished much new material for Partington's work; indeed it would seem that the accumulation of this wealth of material was the chief incentive to the production of the book, yet, extensive as the new material is, it forms only a small part of the matters treated, for these embrace the whole field from the statements of the earliest historical writers on Egypt, Babylonia, Assyria, and other ancient civilizations.

Partington's method is direct and purposeful; there is no circumlocution, and the reader is never misled regarding authenticity. The bibliographical references are rarely fewer than ten to a page, and are often more than twenty. To those having deeper knowledge this fact will prove to be an eloquent testimony of the work undertaken by the author. He has certainly established a landmark in the history of this field of study.

THE MEDICAL DIRECTORY, 1936

The ninety-second annual issue of the *Medical Directory*[7] for 1936 has been published, and once again it reflects the greatest credit upon Messrs. J. and A. Churchill. No other profession in this or any country is better served in this respect. For comprehensiveness and convenience the *Medical Directory* is a model of its kind, and random sampling of the new edition satisfies us that its long-built-up reputation for accuracy will be well maintained through the coming year. Some 30,000 changes, small or large, have been made in the course of revision. The total number of pages of text and advertisements is 2,460. According to the numerical summary on page viii (opposite the contents page) the names now number 58,094, representing an increase of nearly a thousand over the figure for 1935. In the Provinces the increase is 533, in London 222, while the entries under "Abroad" number 10,183. There are small increases in Scotland and Wales, but Ireland again shows a slight decrease. The entry under "Services" has remained almost stationary for some years past. The section on "British Health Resorts: Spas, Seaside, and Inland," edited by Dr. Fortescue Fox, no longer appears in this volume, being now the official handbook of the British Health Resorts Association. The "Late List" of new names, changes of addresses, etc., appears at pp. 2258–2260. In a postscript the editor asks members of the profession not only to give early notification of their own changes of addresses and appointments, but to send him information about other practitioners—for example, deaths, new arrivals in the district.

Notes on Books

The popularity of Mr. ZACHARY COPE'S *Early Diagnosis of the Acute Abdomen* (Humphrey Milford, Oxford University Press, 10s. 6d.) has been proved by the frequent appearance of new editions and new impressions. The latest includes some additional paragraphs showing the help that may sometimes be obtained from *x* rays in the diagnosis of intestinal obstruction.

The small handbook entitled *Apparat für Prazisionsaufnahmen des Schadels*, issued by the publishing firm of Georg Schonander in Stockholm, describing the special *x*-ray apparatus designed and used by Dr. ERIK LYSHOLM, is extremely well illustrated. The methods advised for examination of different parts of the skull form a very notable addition to the technique of skull radiography. Dr. Lysholm is the well-known authority in this branch of *x*-ray diagnosis. The book fully describes the exact position and technique necessary for investigation of the sinuses for ventrilography and encephalography and the production of arteriograms. We can strongly recommend its perusal by all who undertake the *x*-ray examination of the skull.

Peter Porcupine (Longmans, Green and Co., 10s. 6d.) is a biographical study of William Cobbett, described by Carlyle as "the pattern John Bull of his century"; he died in 1835. Miss MARJORIE BOWEN draws a sympathetic picture of this outstanding personality, and she paints in a background of contemporary history and conditions which enhances the value of the book. From a humble origin Cobbett, through sheer ability and strength of character, became one of the most notable men of his time. As a forceful and prolific writer he directed his energies towards the abolition of abuses and the betterment of the labouring classes.

[7] *The Medical Directory*, 1936. London: J. and A. Churchill. (36s.)

Preparations and Appliances

PERITONSILLAR ABSCESS OPENER

Mr. ARTHUR MILLER, F.R.C.S. (London, W.1), writes:

The difficulties often experienced by the general practitioner in opening a peritonsillar abscess are overcome by the instrument illustrated. The advantages claimed are: that it requires only a small opening of the mouth, the instrument is introduced with the double-edged blade protected in the sheath and cannot therefore alarm or injure the patient, the

blade is kept under tension by a spring, and when released by pressing the lever (C) it produces a sharp, instantaneous, and almost painless incision. The instrument is applied firmly to the part to be incised after the length of the blade has been regulated by adjusting the screw (A). This instrument is an improvement on the one I described in the *Lancet* of December 29th, 1928 (p. 1344).

Mayer and Phelps of New Cavendish Street, W.1, are the makers of this instrument, and have also a model with an electric lamp fitted into the barrel.

ALUMINIUM SALT FOR GASTRIC DISORDER

Normo-gastrine (Burgoyne, Burbidges and Co. Ltd., East Ham, E.6) is a preparation of silicate of aluminium intended for the treatment of gastric hyperacidity. The substance is not alkaline, and does not affect the acidity until this becomes greater than 0.15 per cent. HCl, but in the presence of higher concentrations normo-gastrine acts as a buffer and restores the acidity to within normal limits.

DIABETIC CHOCOLATE

Meltis "Sionon" chocolate (Meltis Ltd., Keetons Road, S.E.16) is a diabetic preparation in which sionon is used as the chief sweetening agent. Ordinary sweetened chocolate contains 50 per cent. or more of sugar, but "sionon chocolate" contains only about 25 per cent. of milk sugar and other carbohydrates and 25 per cent. of sionon. Sionon is the trade name for *d*-sorbitol $[C_6H_8(OH)_6]$. Tests by Payne and others[1] showed that doses of 25 grams did not raise the blood sugar of diabetics. These authors concluded that sionon probably was not absorbed, and considered that not more than 50 grams should be taken daily. In the case of chocolate the question of the food value of sionon scarcely arises, and this preparation is pleasant and palatable.

COLLOIDAL CERIUM OXALATE

Cerocol (Coates and Cooper Ltd.) is a colloidal preparation of cerium oxalate, which is recommended for use as an antiemetic. Sir J. Y. Simpson, in 1854, introduced cerium salts for the treatment of vomiting in pregnancy. The experimental evidence regarding this action is scanty and somewhat inconclusive (Oda,[2] Pfeifer[3]). There is a general agreement that insoluble cerium salts are harmless when given orally.

[1] Payne *et al*: *Lancet*, 1933, ii, 1257.
[2] Oda, S.: *Zeit. f. d. ges. exp. Med.*, 1931, lxxx, 1.
[3] Pfeifer: *Zentralbl. f. inn. Med.*, 1932, liii, 1543.

British Medical Journal

SATURDAY, DECEMBER 14th, 1935

THE MEDICAL CURRICULUM

The recent session of the General Medical Council was unusually strenuous and protracted, and the difficulties raised by so full a programme appear to have resulted in an unfortunate disproportion between the time devoted to disciplinary cases and that given to the reports of the Council's committees. The hearing of disciplinary cases must necessarily occupy a great part of the time of the Council ; but there seems to be no reason, except perhaps the natural wish to conclude the business of the Council as soon as possible, why this should result in the reports of all committees being treated as formal documents that can be disposed of in routine fashion. This applies particularly to the report of the Curriculum Committee, which was approved without any opportunity for debate. It will be remembered that consideration of the interim report of the committee in May last was taken *in camera*. The effect of the procedure followed on these two occasions is that, when the amended resolutions governing the medical curriculum come up for final consideration at the next session of the Council there will have been no public discussion at all by the Council as such on this most important matter for the information or guidance of the teaching or examining bodies and of the profession in general. We venture to say that unless the democratic method of arriving at decisions after free debate is now looked upon as futile and obsolete it should not be nullified in this manner. The practice of the General Medical Council in asking for the observations of various bodies upon the original suggestions of the committee and then of again circulating these observations is not unreasonable, but the advantage of a public discussion of these proposals and comments by the Council itself is equally beyond question.

The principal criticisms of the Report which the British Medical Association felt constrained to make were formulated by its Education Committee and generally approved by the Representative Body in July last. It is gratifying to note that they have to a large extent been met by the alterations which the Curriculum Committee of the General Medical Council now suggests in the resolutions as at first proposed. Setting aside, as for the time being impracticable, the proposal of the Association that there should be a brief but definite period of responsibility under supervision, at the end of but within the curriculum, the chief defect in the curriculum as now suggested for final consideration is the overloading of the first two years of the medical course proper. If these proposals are adopted without modification the position is, in this respect, likely to be made even more disadvantageous than under the present regime. In the " period of study of the professional scientific subjects," human anatomy and physiology, are now to be added " the elements of genetics," " elements of normal psychology," " instruction in normal reactions of the body to injury and infection," and " elements of the methods of clinical examination." These additions are quite proper, even essential, but if they are to be effectively undertaken some corresponding lightening of the course in other directions will surely be necessary. There is no suggestion for any such lightening in the second interim report, except through a vague phrase about excessive detail in anatomical instruction. There are at least two ways in which the required relief can be given. Both are suggested in the Association's memorandum. One is the relegation of the study of the general principles and elements of biology to the pre-registration period and the requirement that the examination in that subject shall be taken at the end of that period. The other is that the dissection of the entire cadaver should not be insisted upon.

The second thoughts of the Curriculum Committee with regard to biology are an improvement upon its first. The original suggestion was that though the study of biology *might* be begun before the medical curriculum proper starts, the examination in that subject must not be taken till at least six months after registration. This untenable position is now abandoned, and it is proposed that a course of instruction *must* be taken before registration, but that the examination thereon *may* be taken later. It is to be hoped that under such a regulation the student would ordinarily undergo both instruction and examination before entering on the study of human anatomy and physiology and the other subjects of his first two years of the medical course ; but it would still be left open to him to complicate and overload these years by the study of elementary general biology with a view to an examination test in that subject. The report, if finally adopted in its present form, would continue to impose on all students, in all schools, " the dissection of the entire cadaver." It is perhaps not unnatural that most professors of anatomy should approve of this ; but there is considerable difference of opinion amongst other members of the staffs of medical schools, and in the general view of the profession as a whole it is an unnecessary requirement. It is agreed that a sound knowledge of the anatomy of every part of the body is essential, but it is held that this can be effectively attained at least as well by other means of instruction in association with a limited but thorough course of dissection. In view of the desirability of not imposing too uniform a method of teaching upon the different medical schools, and of the paramount need for relieving the pressure on the student during his first two years under the new curriculum, it is much to be hoped that the General Medical Council will ponder its committee's proposal very carefully before adopting it. A traditional custom should be adapted to practical requirements.

The text of the first interim report of the Curriculum Committee of the General Medical Council appeared in this *Journal* on June 15th (p. 1222). The observations of the Medical Education Committee of the British Medical Association thereupon were printed in our *Supplement* of July 13th (p. 17). Last week (p. 1121) we summarized the second interim report of the General Medical Council Committee, and in the *Supplement* to our present issue (p. 268) the text of the amended resolutions is given. The proposals of the Committee's first report would undoubtedly effect an improvement in the resolutions at present in force ; and the proposals of the second report would materially enhance the value of these improvements, though there is one point in which they appear to go back upon them. The requirement that the pre-registration scientific examination should include also " one or two subjects of general education of an approved standard " was widely welcomed ; but it is now explained that this " approved standard " should be no higher than that demanded of the student in these subjects some two years earlier. This surely needs reconsideration along with the other important points commented on above.

THE SPAHLINGER EXPERIMENTS

On October 5th (p. 628) we reviewed the report on the Spahlinger experiments in Northern Ireland, in which an attempt was made to immunize calves with a dead vaccine against an intravenous dose of living tubercle bacilli.[1] While admitting that the results afforded a prima facie case for further investigation of the vaccine, we pointed out that the conditions of the experiment and the number of animals used were such as to deprive the results of any statistical significance. The hope was expressed that some such body as the Agricultural Research Council would interest itself in the question and undertake a carefully planned experiment on a number of animals sufficient to enable a definitive answer to be obtained. It will interest our readers to learn that a report[2] has just been issued by the Joint Committee on Tuberculosis of the Medical Research Council and the Agricultural Research Council giving a critical account of the Northern Ireland experiments for the general information of the public. Though the difference between the vaccinated and control groups was striking, the Committee makes it clear that the number of animals used was not sufficient to afford conclusive results. A number of criticisms are offered on points of detail. The calves were not tested with tuberculin before the experiment, so that there was no guarantee that they had not already been infected naturally with tuberculosis. That the vaccine contained only dead organisms rested solely on Mr. Spahlinger's statement, and no tests were recorded to ensure that all organisms had been killed, or to compare the value of the different batches of vaccine used. The Committee realizes the need of more information before the method can be introduced into practical farming. In particular, its members would like to know (*a*) whether the tuberculin test interferes with vaccination, as Mr. Spahlinger suggests ; (*b*) the best dose of vaccine and the best manner of vaccination ; (*c*) the most suitable age for vaccination ; (*d*) the time after vaccination at which immunity appears and the length of time it lasts ; (*e*) the persistence of immunity in animals exposed to infection under natural conditions ; and (*f*) whether natural exposure to infection would result in less disease than that caused by intravenous inoculation.

These questions are numerous, and the answer to each one will demand a large series of animals if reliable results are to be obtained. Most important of all is the question whether the successful immunization of calves against experimental infection is likely to bear any relation to the development of tuberculosis in cows under natural conditions. Calves, it will be remembered, seldom develop tuberculosis in the field. The incidence of this disease increases with each year of age, and causes comparatively little trouble till the animals have passed through two or three pregnancies. However successful, therefore, the experimental vaccination of calves against artificial infection may be, there can be no assurance that it will be equally successful in diminishing the natural morbidity rate from tuberculosis among cows. The Joint Committee on Tuberculosis is strongly of the opinion that a thorough test should be made in this country, and urges that, until the vaccine has been shown by further and extended experiments to be effective against natural as well as experimental methods of infection, its practical application should be deferred.

[1] Report on the Spahlinger Experiments in Northern Ireland. Belfast: H.M. Stationery Office. 1935. (1s. 6d.)

[2] Privy Council, Agricultural Research Council. Observations by the Tuberculosis Committee on the Experiment with Spahlinger Vaccine in Northern Ireland. London: H.M. Stationery Office. 1935. (2d. net ; postage extra.)

PERIARTERITIS NODOSA

The diagnosis of periarteritis nodosa in life is unusual, though it is more than three-quarters of a century since the first pathological description was published by Rokitansky, while the first case was reported by Kussmaul and Maier in 1866. But cases have now been described and correlated with pathological findings in sufficient numbers to allow certain combinations of symptoms to be recognized as characteristic. These should facilitate the clinical diagnosis of the disease, and may perhaps reveal it as less rare than has been supposed. The primary lesion is an acute inflammation of all the coats of the smaller arteries and arterioles, the capillaries, veins, and larger elastic arteries escaping. Cellular exudate in the adventitia sometimes produces nodules, which in the case of subcutaneous vessels may be easily palpable. From these the name is derived, though it has been suggested that the term " necrotizing panarteritis " would be more accurate pathologically. Intimal thickening and thrombosis lead to ischaemic changes in the organs supplied, and these changes contribute largely in the production of symptoms. Aneurysms may form as the result of the vascular injury, and sometimes rupture. Though it appears that no area of the body is immune from this

form of arteritis, the vessels of the kidney, heart, and mesentery seem to suffer with the greatest frequency. The chief clinical features have recently been analysed by W. S. Middleton and J. C. McCarter,[1] from a review of the literature and three cases of their own, the results of which lend support to the value of Meyer and Brinkmann's tetrad. This comprises chlorotic marasmus, polyneuritis and polymyositis, abdominal symptoms (such as cramps, vomiting, diarrhoea, melaena, and perforation), and nephritis, which is revealed by urinary changes and the hypertension so often observed. Fever is frequent—perhaps always present—in the earlier inflammatory phase, and leucocytosis is to be expected, sometimes, though not always, with a high proportion of eosinophils. Direct evidence of arterial changes such as palpable nodules cannot be relied upon, neither has examination of the retinal arteries yielded much help, though occlusion of the central artery of the retina has been described,[2] and histological sections have shown arterial changes in the choroid.[3] The changes of hypertensive retinitis may be present, but these differ in no way from such changes associated with hypertension of other origin ; it may be noted here that the disease has been misdiagnosed as malignant hypertension, and the pathology of the two conditions is in fact to some extent similar. In suspected cases confirmation of the diagnosis may be obtained by a biopsy of voluntary muscle, or, if present, of a subcutaneous nodule. Little is known about the aetiology ; and bacteriological investigations of blood and tissues, and attempts to produce the lesions in animals, have proved negative ; but there is evidence that the condition is in some way related to rheumatic fever. For example, rheumatic endocarditis has been found in association with the disease more often than can be explained by coincidence, and inflammatory changes in the walls of the smaller arteries is a feature of acute rheumatism. On the other hand, the age incidence in the two conditions differs much, for while the initial attack in acute rheumatism is most common in childhood, adolescence, and young adults, periarteritis nodosa may occur at any time from infancy to old age. The prognosis has been thought to be extremely grave, if not hopeless, but with increasing facility of diagnosis there is the possibility that spontaneous healing and recovery may take place in milder cases which have not hitherto been recognized.

WORK OF THE PERMANENT OPIUM BOARD

The Permanent Central Opium Board recently reported to the Council of the League of Nations on the work transacted at its four sessions during 1934–5. The Board has lost the valuable services of Dr. Anselmino and Professor Miyajima, and during the illness of its president, Mr. L. A. Lyall, his place was filled by Mr. H. L. May. The Board scrutinizes the course of international trade in dangerous drugs under the Geneva Convention of 1925 and the Limitation Convention of 1931, and is empowered, where excessive stocks of any narcotics are accumulating in any country, to take steps to overcome the danger. Some difficulties have arisen over different interpretations placed on the Articles of the Limitation Convention by certain countries, and forged import certificates have sometimes been passed as valid by exporting countries. The statistics furnished to the Board show that in the case of morphine the total manufacture has declined in Germany, the United States, France, and Switzerland, the decrease amounting to more than 25 per cent. ; but, on the other hand, manufacture increased last year in Belgium, Hungary, Italy, Poland, Sweden, and Czechoslovakia to the extent of 86 per cent. The production of heroin has fallen off everywhere except in the Netherlands, Soviet Russia, and Belgium. Nearly half of all the heroin produced is manufactured in Japan. Five countries showed an increase in the amount of cocaine manufactured in 1934—namely, Poland, Czechoslovakia, Soviet Russia, Belgium, and the United States. Here as in the case of morphine there is a movement away from old to new centres of manufacture. As regards both heroin and cocaine the figures show that most of the countries have manufactured greater amounts than they were entitled to produce. The most important excess in the case of heroin was in Korea, where it amounted to 90 kilograms. The amount of morphine manufactured in the whole world, according to the figures received, exceeded that permitted under the Convention by 1,019 kilograms. Shipments of opium from Turkey to Panama, Argentine, and Ethiopia in the last two years, amounting to more than 5,000 kilograms, came under special investigation by the Board. As no corresponding imports were returned from these countries the Governments concerned informed the Board that the certificates covering the goods must have been forgeries. It would appear, also, that 2,700 kilograms of opium exported from Turkey during the second quarter of this year to Paraguay were contraband and destined to pass into illicit traffic.

A NEW "CURE" FOR CANCER

"Cancer cures" come and go with monotonous regularity. The latest to find sensational advertisement in the daily press is a serum treatment devised by two French medical men, Drs. L. Revelis and A. Pacette. The newspaper reports are devoted chiefly to an emotional description of cases treated with the serum ; the details of the supposed discovery are not described clearly or even intelligibly. It would appear, however, that the scientist of the combination is Dr. Lewis Revelis, a biologist who has studied cancer for twenty years. He has come to the conclusion that cancer is caused by a bacillus, "torpedo shaped," pointed at both ends and covered with a double shell of wax. Presumably the bacillus is injected into horses for the purpose of obtaining the immune serum which is used therapeutically. Since May of this year, it is stated, sixty cases of cancer have been treated. Of these, thirty have been cured—"veritable resurrections"—and the remaining thirty are progressing satisfactorily. It is difficult to discuss these claims seriously. The short period of time during which the treatment has been tried, the small number of cases treated, the absence of scientific records in the French medical journals, and the strange fact that it appears necessary to experiment with this remedy on English cancer

[1] *Amer. Journ. Med. Sci.*, September, 1935, p. 291.
[2] Ibid., p. 317.
[3] Ibid., p. 308.

patients when there are at least 100,000 cancer cases in France crying out for a "cure"—all these points call for comment but may for the moment be neglected. So, too, a statement by the French doctors that they are now proceeding to cure tuberculosis and leprosy on similar scientific principles is hardly worthy of notice. It is necessary only to refer to the claim, or belief, that cancer is caused by "a torpedo-shaped" bacillus. Thirty years of careful, exact research by competent investigators in every civilized country has failed to reveal any bacillus in cancer. Further, it is now generally recognized that the nature of cancer is such as to preclude the possibility of the existence of a "cancer bacillus," capable of causing cancer by simple infections in several species of animals. The claims made by Dr. Revelis are equivalent to a parasitic hypothesis of cancer in its crudest form. In the tumours which are caused by a parasite—an ultra-microscopic virus—it has been shown that the virus is specific both for the type of tumour cell and for the species of animal from which it is obtained. Moreover, an antiserum to the virus—easily obtained by injecting a suitable animal with cell-free extracts of the tumour—is not able to affect the virus existing in the living cancer cell: the serum acts on the virus only when the virus is separated from the cell. Everything advanced in favour of this latest "cure" is at variance with the knowledge we possess of cancer.

STANDARDIZATION OF VITAMIN A

The problem of estimating the amount of vitamin A present in different substances has had a curious history. Hopkins solved it originally when he published his well-known growth curves showing the effect of withholding or administering small amounts of milk to the diet of young rats. Hopkins's curves were composite curves showing the average effect in groups of animals. However, the lesson he taught was lost, and for many years workers vainly attempted to draw conclusions from the discordant growth curves of individual rats. They employed methods which have enabled a rough comparison to be made of the amounts of vitamin A in different substances, but which did not furnish any idea of the accuracy of this comparison. Dr. Katharine Coward was the first to study the problem systematically, and her work has shown how it is possible not only to estimate vitamin A but also to know the error of the result. Her methods have been adopted by other workers, and have given a much needed impetus to progress in this field. A further step of great importance was taken in 1931 by the International Conference on Vitamin Standardization, which adopted carotene as an international standard. The distribution of this standard made it possible for workers in different parts of the world to speak in terms of a common unit. At the second conference in 1934 the original carotene standard was replaced by β carotene. Alongside the biological method, various other methods, in particular the spectrophotometric method of estimating vitamin A, have been developed. A report has recently been published by the Medical Research Council[1] describing the work of a committee which has been studying different technical problems concerning the use of the standard. The report gives the results obtained by different workers for the same samples of cod-liver oil estimated in comparison with the standard by biological and other methods. The report has been edited by Miss E. M. Hume and Dr. Harriette Chick, and the hope is expressed that it will stimulate further investigation.

[1] Medical Research Council, Special Report Series, No. 202. H.M. Stationery Office. (1s. net.)

CHARLES RICHET

On December 4th Professor Charles Richet died in his home in the Rue de l'Université, Paris, at the age of 85. With him passes a great scientist who made his mark in many fields, and whose personality is intimately associated with some of the greatest advances made in medicine during the past half-century. Serotherapy and the phenomenon of anaphylaxis owe their discovery to an intellectual giant whose diversity of gifts was indeed impressive. Richet came of intellectual stock, his father being Professor Alfred Richet. During the first phase of his career Richet's interests were mainly physiological, and it was not till later in life that he gave rein to other impulses, which led him to explore such widely different fields as those of aviation and metapsychics. Among the most important of his earlier physiological researches was his investigation of the gastric juice, of the phenomena of the heat regulation of the body, the control of respiration by the nervous system, and the activities of the muscles of the invertebrates. In a communication to the Academy of Medicine in 1932, entitled "Les Origines de la Sérothérapie," he traced the development of serotherapy since 1887, when his studies of cancer and of a dog's tumour yielded as a remarkable by-product the first clues leading up to the discovery of passive immunization by the transfer of blood from one animal to another. He was associated in this work with Héricourt, with whom he presented a report on the subject to the Academy of Sciences on November 5th, 1888. It was at a considerably later date that, in conjunction with Portier, he gave the world his conception of anaphylaxis. Richet's psychical researches may not, perhaps, have yielded the tangible fruits he gathered in so many other fields, and he was the first to admit his inability to penetrate as deeply as he had wished those mysteries he sensed but could not always define. His loyalty to scientific methods did much to prevent his getting too much out of his depth, and he has summarized his sustained faith in the things unseen in his verdict: "Je crois à l'hypothèse inconnue qui sera celle de l'avenir, hypothèse que je ne puis formuler, car je ne la connais pas. . . . Il y a là de grands mystères à approfondir. La tâche est si belle que, même si elle doit échouer, l'honneur de l'avoir entreprise donne quelque prix à la vie." His psychical researches led him to publish such works as *Traité de Métapsychie* and *Notre Sixième Sens*. When, in the early days of aviation, he constructed, in association with Tatin, a flying machine with which he made a brave attempt to conquer the forces of gravity, he gave expression to the same impulses which, throughout the greater part of his life, drove him to explore what is commonly known as the occult. In 1926 the Société de Biologie celebrated Richet's scientific jubilee in the amphitheatre of the Academy of Medicine in the presence of Paul Painlevé and Maréchal Foch. The allocution of the President of

the Academy of Medicine on this occasion was conceived in that spirit of alert philosophy which has been the keynote of Richet's life. Among the numberless honours bestowed on him was that of the Nobel Prize, which he received in 1913. The list of his publications is as long as the subjects with which they dealt are varied ; and they range from a dictionary of physiology to a comedy and fables for small and great. It was the great war which inspired him to write the *Histoire des Sociétés Humaines*.

A CENTURY OF PUBLIC HEALTH

To celebrate the centenary of local government in this country the *Times* issued on December 10th a special centenary number in which a comprehensive account is presented of the changes that have taken place in local government since Lord John Russell conducted through Parliament the Municipal Corporations Act of 1835. While this supplement contains much that is of interest to medical readers, especially those in the public health service, the contribution by Professor W. W. Jameson may be read with particular profit. Professor Jameson points out that the alarm caused by the appearance of cholera in England in 1831 led to the formation of our first, though temporary, central board of health. The reform of Parliament in 1832, of the Poor Law in 1834, and of town government in 1835 paved the way for the work of Edwin Chadwick, round whose career the history of public health in this country centred during the twenty years following his membership in 1832 of the commission appointed to inquire into the working of the Poor Laws. In 1848 the first Public Health Act was passed, and a General Board of Health was created with powers to establish local boards of health in populous areas. In 1854 the Bill containing the proposal to continue the Board was defeated. In 1858 the Privy Council took over the duties and personnel of the new Board which had in the meanwhile been carrying on the work. The first medical officer of health to be appointed by a local authority was Dr. Duncan in Liverpool in 1847. Dr. John Simon, for the City of London, was appointed in 1848, and his reports on house drainage, water supply, housing conditions, etc., were of such value that the General Board of Health chose him as its first medical officer. At the same time William Farr was turning to good account the statistical information supplied by the registration, introduced in 1836, of births, deaths, and marriages. There was, however, much confusion in the administration of the laws relating to public health. Parish vestries, boards of guardians, large towns with varying powers obtained by local Acts of Parliament, all contributed to the confusion. The Royal Sanitary Commission of 1869–71 recommended that "all powers requisite for the health of towns and country should in every place be possessed by one responsible authority, kept in action and assisted by a superior authority." The Local Government Board was then established, and the Public Health Act of 1875 placed on the Statute Book. The appointment of medical officers of health was made compulsory. The idea of preventive medicine grew with the discoveries of the pioneers in bacteriology, and an important step in the detection and prevention of disease in the early years of life was taken when the School Medical Service was founded. Sir George Newman was appointed the first medical officer of the Board of Education in 1907. In the succeeding period local authorities were given increasing powers in relation to maternity and child welfare, tuberculosis, mental deficiency, and infectious diseases. After the war an important move towards more efficient co-ordination and centralization of the various health services was made by the establishment of the Ministry of Health, which had long been advocated by the British Medical Association. Once again there was dissatisfaction with the way in which public health duties were administered, and, finally, Mr. Neville Chamberlain, then Minister of Health, piloted through Parliament the Local Government Act of 1929. Until the passing of this Act the great municipalities were concerned in the main with the prevention of disease and the provision of sound sanitation. With the passing of the Act they have now become "the largest providers of hospital treatment in the country." Professor Jameson concludes his article by saying: "Many influences have been at work during the past 100 years tending to make the lives of the people of this country healthier and happier, and probably by far the most important of these has been the work done by the local bodies whose constitution was shaped by the Municipal Reform Act of 1835."

SOUTH AFRICAN MEDICAL CONGRESS

The thirtieth South African Medical Congress will be held from Monday, June 29th, to Friday, July 3rd, 1936, inclusive, in Pietermaritzburg. A warm invitation to attend this congress is extended to any members of the parent Association who may be in South Africa, or planning a holiday abroad, at that time. At this congress a large number of the members of the South African Medical Association (B.M.A.) will meet for discussion, and their entertainment, in South African fashion, will not be neglected by the hosts—the Natal Inland Branch. Pietermaritzburg, founded nearly a hundred years ago by the Voortrekkers, is the capital of Natal. It lies in delightful surroundings about fifty miles inland from Durban, and at the beginning of July the climate is ideal—the days are warm with the sunshine of the South African winter, while the nights are pleasantly cool. For those who are interested in racial problems there is ample opportunity to study the life of the Zulu, at work and at play, while the historical interest of Pietermaritzburg and the surrounding country is considerable. During the week previous to the congress will be held the Royal Agricultural Show, the "high light" of the year's work in rural Natal. On the day after the congress the race for the blue riband of the South African turf—the July handicap—will be run at the coast at the height of the Durban season. Any members who think of attending are asked to communicate with the Medical Secretary, B.M.A. House, Tavistock Square, London, W.C.1, or directly with Dr. C. C. P. Anning, honorary organizing secretary, P.O. Box 285, Pietermaritzburg, South Africa.

We regret to announce the death, after a short illness, at the age of 53, of Mr. Walter Sydney Perrin, M.Ch., F.R.C.S., surgeon to the London Hospital.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some diseases of the nervous system met with in general practice.

THE MANAGEMENT OF INTRACRANIAL TUMOUR

BY

D. DENNY-BROWN, M.B., M.R.C.P.,

AND

HUGH CAIRNS, M.B., F.R.C.S.

A prime consideration in the surgical treatment of a case of intracranial tumour is the operative mortality rate. In expert hands, with determined effort to secure radical removal, this rate is nowadays 10 to 20 per cent., reckoned by the standard that any patient who dies in hospital after operation is an operative death. The best end-results to date show one in every four patients of an unselected series of cases living a useful working life approximately ten years after operation. Such results have been obtained by the concentration of cases in centres where particular study is made of the diagnostic and therapeutic problems peculiar to this condition. With the advantages of modern transport, treatment in a neurological centre is available to every patient, and there is no longer need to compromise by doing emergency palliative operations in places where special facilities are lacking. There is, nevertheless, much the general practitioner can accomplish, not only in the recognition of the early stages of the disease, but in the management of increased intracranial pressure and in giving general advice to the patient and his relatives.

Paroxysmal morning headaches and swelling of the optic disks presage rising intracranial pressure, and are the most usual early signs. However, varieties of intracranial tumour occur in which headache, papilloedema, and vomiting only appear very late. It must be emphasized, therefore, that any impairment of cerebral function *which tends to progress* should come under suspicion. This is true not only of a hemiplegia which increases in severity or of focal Jacksonian epilepsy with gradual impairment in function in the part involved, but also of increasing disturbance of vision, speech, or memory. Alone, or in various combinations, these derangements commonly indicate the effect of progressive compression or destruction of cerebral substance by a neoplasm. The repetition of sudden, but transient, severe exacerbations of headache indicates a particularly urgent need for treatment.

Procedure in Investigation

Skilled clinical investigation and evaluation of the history is the first essential in the steps which lead to localization of the neoplasm, and decision as to manner and practicability of surgical attack. Stereoscopic *x*-ray examination of the skull gives valuable collateral evidence, not only from the occasional calcification of the neoplasm itself, but also from changes in neighbouring bony structure.

Study of the evolution of the clinical picture, usually in combination with radiological evidence, has done much to enable a fair estimate of the pathological nature of a tumour to be made before exploration. The most benign tumours are the cerebellar astrocytoma (glioma) and haemangioblastoma (vascular tumour with cyst), the colloid tumours of the cerebral ventricles, the meningioma (dural endothelioma), cholesteatoma and dermoids, pial cysts, and pituitary adenoma. All these tumours are favourably disposed for surgical removal, and each not uncommonly presents features enabling pre-operative identification to be made. The remaining common varieties of glioma have a rapidly growing, infiltrating edge, and tend to recur after excision. The medulloblastoma of the cerebellum in young people and the glioblastoma (spongioblastoma) of adult life are the most malignant. Their symptoms, as a rule, progress rapidly, and because of this a fairly accurate pathological diagnosis can sometimes be made on clinical grounds, and in some cases it is right that operative treatment should be withheld. It is not, however, always possible to distinguish clinically between the malignant cerebellar medulloblastoma and the benign cerebellar astrocytoma, and, furthermore, certain favourable expanding intracranial lesions, like abscess and subdural haematoma, may on occasions closely simulate malignant intracranial tumours in their clinical picture. Malignancy alone is not always a contraindication to surgical intervention, and even with metastatic tumours experiences of the isolated metastasis occurring years after removal of the primary source leave the impression that years of survival might in some cases be obtained by surgical attack.

When the probabilities of localization and pathology have been narrowed down by skilled clinical and radiological examination further information is frequently desired, and ventriculography, and occasionally arteriography, are used. These procedures come properly only when the stage is set for immediate operation, owing to their liability to bring about a crisis in the state of intracranial pressure.

Danger of Lumbar Puncture

The size of a tumour within the cranial cavity increases at the expense of both the bulk of the brain and the total quantity of cerebro-spinal fluid. To attempt to relieve the pressure by withdrawal of cerebro-spinal fluid by lumbar puncture brings about increase in bulk of the compressed cerebral substance. This is extremely dangerous by reason of the tendency of the swelling brain to compress the medulla by a cone-shaped hernia of cerebellum through the foramen magnum. When papilloedema, headache, and vomiting have already declared the presence of high intracranial pressure neither lumbar puncture nor ventricular puncture should be performed unless these are absolutely necessary for pathological diagnosis and unless operative exploration can immediately follow. The minimum amount required for Wassermann test, cell count, and protein estimation (3 c.cm.) should be withdrawn.

The Removal of Tumours

The technical procedure of removal of an intracranial tumour rests with the surgeon concerned, and each case becomes a separate problem. For cerebellar tumours it is accomplished by permanent removal of the bone between the foramen magnum and the lateral sinus. On completion of the operation the muscles of the back of the neck are stitched back into place, giving ample protection to the area from which bone has been removed. For tumours above the tentorium approach is made by an osteoplastic bone flap, the bone being subsequently replaced. A small gap in the skull does not require any

special protection, but on account of the particularly unpleasant effects on the brain itself when it bulges far through a large opening ("hernia cerebri") the modern tendency is invariably to replace the osteoplastic flap at the conclusion of operation.

Operative Decompression

The operation of palliative decompression was until quite recent years in general use, with relief from headache and the saving of vision as primary objectives when the tumour itself could not be approached. In some respects this practice has undergone a radical change. Cerebellar decompression still remains a useful operation, especially as a first stage in the approach to the more difficult posterior fossa tumours. Subtemporal decompression, which leaves the bony opening securely covered by temporal muscle, has occasional value, though employed less and less. Wide, unprotected decompression of the frontal and parietal regions has been completely abandoned by most neuro-surgeons. The release of a large area of brain from the internal pressure results in even more eventual damage than release of a small area. Hemiplegia and hernia cerebri frequently followed, to confuse the signs already due to the tumour; vision as often as not continued to deteriorate; and an unhappy existence was unduly prolonged. With the advantage of improved methods the surgeon prefers nowadays to make radical excision of a cerebral tumour, closing the osteoplastic flap firmly in all cases, even if recurrence of the neoplasm is likely. By this method the period of relief from symptoms that follows removal of the tumour is not interfered with by an unsightly cerebral hernia, and the duration of the illness that sets in when the tumour grows again is mercifully short.

Decompression by Hypertonic Solutions

The injection of hypertonic solutions into the blood stream dehydrates the bodily tissues as a whole, including the brain and any tumour that is present. Withdrawal of fluid in this manner rapidly and most effectually relieves increased intracranial pressure. For this purpose either 30 to 50 c.cm. of a 15 to 30 per cent. solution of sodium chloride or 30 to 50 c cm. of a 50 per cent. solution of glucose are employed. This intravenous injection should be given very slowly indeed. The effect is often dramatic, but within a few hours a counter-effect often occurs, for which a further injection is less effective. For this reason intravenous hypertonic solution is reserved for conditions only of extreme urgency, where continuous attention is available and operation can be quickly begun. In some circumstances it may be used to allow a patient to travel.

For prolonged relief, either during investigations to establish localization before operation, or in cases judged inoperable, regular rectal injections of magnesium sulphate are given. Six ounces of a 30 to 50 per cent. solution of magnesium sulphate in water are run slowly into the rectum, and the patient is instructed to retain it as long as possible (usually ten to thirty minutes) before voiding the increased volume of fluid that accrues. This should be given at first twice daily. The maximum effect appears only after several days, following which the instillation may be given only once daily. In such a way patients may be spared distressing symptoms for weeks or even months. In recurrent or malignant tumours the inevitable termination is thus postponed, and the terminal stages are more brief. In the general management of cases of increased intracranial pressure rectal magnesium sulphate, injected as above, is of importance. A similar, but usua lly less satisfactory, effect can be secured by regular dosage of half an ounce of magnesium sulphate by mouth, with restroction of fluid intake.

Deep X-Ray Therapy and Radium

Normal nervous tissue has high resistance to the effect of radiation by radium or deep *x* rays, a property which is unfortunately shared by most of the neoplasms which arise within it. So far temporary success has been obtained with the rapidly growing medulloblastomas and with some of the oligodendrogliomas. On occasions verified cases of spongioblastoma multiforme have also reacted well. The treatment should be in the hands of expert radiotherapists. Severe immediate reaction may occur in the tumour. Except on expert neurological advice such therapy is confined to cases in which the nature of the neoplasm has been verified at operation. Arteriovenous aneurysmal tumours may react well to deep *x*-ray therapy, but this is not invariable.

Medicinal Treatment

Apart from direct surgical attack the relief of symptoms of rising intracranial pressure by hypertonic solutions is by far the most effective of medicinal procedures. For recurrent vomiting full doses of atropine are sometimes prescribed. Headache may be intense in spite of dehydration, and is treated by analgesics such as the combination of aspirin and pyramidon, 10 grains each, repeated four-hourly. Morphine is extremely dangerous when the pressure is high, owing to its depressant action on a respiratory centre already labouring under difficulties. Epileptic attacks should be treated by luminal and bromides by mouth, and if status epilepticus supervenes paraldehyde, 2 drachms four-hourly by mouth, with luminal sodium, 3 grains intravenously, is the most satisfactory treatment. Extreme restlessness is controlled by chloral, bromide, and paraldehyde.

Finally, it may be observed that increase in intracranial pressure has origin in states other than cerebral tumour—not only in subdural haematoma and the like, but in hydrocephalus of various kinds—and most detailed and accurate clinical investigation is therefore absolutely essential to adequate treatment.

PRESENTATION TO SIR ARTHUR ROBINSON

Sir Kingsley Wood, the Minister of Health, made a presentation of plate, on December 5th, to Sir Arthur Robinson on behalf of a large number of Sir Arthur's colleagues and friends in the Ministry. Sir Arthur was Secretary of the Ministry of Health from 1920 to 1935, and resigned this post on October 31st last to undertake the duties of Chairman of the Supply Board. The Minister, in making the presentation, said that they had met to do honour not only to a great civil servant but to a true friend of them all. Sir Arthur passed first into the Civil Service in 1897, and in 1920 succeeded Sir Robert Morant as Secretary to the Ministry of Health. Perhaps his most trying experience had been to serve under no fewer than nine Ministers of Health, but he had nevertheless directed their immense legislative achievements of the last fifteen years and the progressive expansion of the social services.

Sir Arthur Robinson, in expressing his thanks to the Minister and to his colleagues, said that there was no rest for the good, and he could foresee none for the Ministry of Health, but he hoped they would remember in the mass of new legislation not to neglect the great task of administration. With more and more legislation they must beware that the consolidation of past gains was not forgotten. There was much more to be done and many more problems to be solved. How, for instance, could one reconcile the preservation of a local spirit—the strength of local government—with the tendency of local institutions to become agents of the State? The work of the Ministry of Health was constructive in the highest degree. In so far as the Ministry constructed it should succeed; in so far as it did not it would fail in its work.

ANNUAL CONGRESS OF RADIOLOGY

The ninth annual congress arranged by the British Institute of Radiology was held at the Central Hall, Westminster, from December 4th to 6th, under the presidency of Dr. L. A. ROWDEN of Leeds. It was accompanied by an exhibition of apparatus, organized by the British *x*-ray industry, and opened by Lord NUFFIELD.

The congress consisted of two sessions for medical papers, one for physical and technical papers, and the two memorial lectures which are delivered each year in association with the meeting. The first lecture was by Dr. G. W. C. KAYE of the National Physical Laboratory, who reminded the gathering that the present month saw the fortieth anniversary of the discovery of *x* rays by Roentgen.[1] He reviewed the history and progress of British radiology since those early days, as seen from the restricted point of view of a physicist who had been enabled to keep in touch with some of the developments of a science which furnished the most signal illustration of the application of physics to medicine. As an instance of journalistic promptitude in the 'nineties he mentioned that the news of the discovery of *x* rays reached London on January 6th, 1896, and five days later was the subject of an article in the *British Medical Journal* by Sir Arthur Schuster, to whom Roentgen had sent a copy of his paper with some *x*-ray photographs.

Modern X-Ray and Radium Equipment

In discussing modern equipment, Dr. Kaye commended the work of Allibone and his collaborators,[2] who had designed and constructed automatically evacuated *x*-ray tubes, and valves, which were self-protected, shock-proof, and press-button operated. The exciting voltages, at present of the order of 200 to 300 kV, were being pushed up to much higher figures—for example, up to 600 kV or more for a forthcoming outfit at St. Bartholomew's Hospital. Higher and higher voltages appeared to be the order of the day, particularly in the States, where installations for medical use employing up to 900 kV had been constructed by Lauritsen and others. In all such outfits the *x*-ray tube, either of glass or stained porcelain, was connected to a diffusion vacuum pump in continuous operation.

In radiation therapeutics, Dr. Kaye continued, certain general principles seemed to be emerging. The quality of radiation required in the treatment of cancer depended on circumstances. *X* rays, radium, or a combination of the two were variously preferred. In certain superficial forms of cancer, such as rodent ulcer, experience indicated that almost any type of radiation would produce healing, whether low-voltage *x* rays or beta or gamma rays of radium. Other types of cancer, such as squamous epithelioma of the skin and lip, were successfully treated by a few milligrams of heavily screened radium. But the major problem of malignant disease was the treatment of glandular metastases. The use both of *x* rays of high output, approaching gamma rays in quality, and of large quantities of radium placed at distances remote from the skin, had their advocates, and adequate protection appeared to be possible in either case. There had been one-gram units at the Cancer and Westminster Hospitals in London since 1929, and both were now contemplating larger units, while King Edward's Hospital Fund in 1933 allocated one-gram units to each of these hospitals, as well as to the Middlesex and University College Hospitals. Edinburgh and Leeds also now had one-gram units. The Radium Beam Research Board was set up at the Radium Institute in 1933, and was at present working with one or more five-gram units. Examples of high-voltage *x*-ray tubes, 400 kV outfits, were to be found at Lambeth Hospital and the Cancer Hospital, while sets to employ substantially higher voltages were being installed at St. Bartholomew's and the Middlesex.

[1] The actual discovery was made on November 8th, 1895, but Roentgen's first memoir was not published until December.
[2] *British Medical Journal*, November 30th, 1935, p. 1066.

Calcium Changes and Diagnostic Radiology

The other lecture, by Dr. G. HARRISON ORTON, was a painstaking description and illustration of generalized and localized calcifications and their significance. The majority of such calcifications, he said, took place in degenerating tissues or in tissues the vitality of which had been impaired. Every part of an organism which was dead or dying tended to become infiltrated with calcium salts ; it was fortunate that young tissue was not capable of fixing calcareous material in the same way or we might all rapidly become petrified. Dr. Orton gave special attention to the simple disuse atrophy or decalcification seen in cases of fracture. In the first place there was a hyperaemia as a result of the injury. With the limb immobilized in splints this hyperaemia in time subsided, but in many cases a process of gradual decalcification continued, for a limb which was immobilized still had its normal blood supply, which was a relative hyperaemia when the limb was functionless. That was why in the treatment of fractures it was important to arrange immobilization so that function was interfered with as little as possible. Decalcification, although it delayed the union of fractures, did not prevent it ; the chief cause of non-union was incomplete immobilization. Radiologists were only too familiar with cases of non-union when two bones of the limb were fractured at the same level ; other familiar examples were the neck of the femur and scaphoid of the wrist. Before union of a fracture could take place young vascular connective tissue must fill in the space between the fragments, and if immobilization was not complete the movements of one fragment on the other would naturally tend to break down the developing tissue, and in addition frequently give rise to a recurring traumatic hyperaemia, which in time would lead to a still further decalcification of the fragments. In the result, if and when the hyperaemia subsided, there was no continuous connective tissue present to become calcified, and sclerosis of the ends of the bones took place with resulting non-union. He thought the treatment of fractures still left much to be desired.

Dr. Orton added some remarks about so-called bone grafts. He could find no evidence that bone which had been transplanted lived ; indeed, there was considerable evidence to show that it died. The fact that a fragment of bone transplanted into another bone died was supported by *x*-ray evidence, for *x*-ray examinations carried out for some months after the operation showed that the transplanted portion of the bone was denser than the surrounding bone, which meant that it was avascular. It might remain so and be tolerated as a prosthesis, or it might be eliminated as a sequestrum ; on the other hand, it might form an intimate adherence to the bed in which it was placed and become completely absorbed by a process of erosion, thus setting free the calcium which brought about the formation of new bone. That was briefly the series of events in a successful transplant. There was evidence to show that the ultimate result was much the same whether the transplant was autogenous or whether dead bone, ivory, or even a paste of calcium salts was employed, one of the chief uses of a bone transplant being to provide a local store of calcium. A bone transplant, therefore, which might be said to have "taken" was one that became vascularized and decalcified. If it became merely a prosthesis which was tolerated it was a moot point whether certain unabsorbable material might not be used to better advantage. The important point for the radiologist to remember was that a successful bone transplant was one that eventually became rarefied. Dr. Orton dealt with several other interesting conditions in which calcium changes played a part.

Radiation Therapeutics

The first of four papers in the session on therapeutics was by Dr. G. VILVANDRÉ, on radiation treatment of carcinoma of the breast. Cases in which radium needling had been the method of treatment had provided the earliest and most extensive recurrences. There seemed in such cases to be a general invasion by malignant cells

of the tissues where recurrence took place. On the other hand, where no radium needles had been used the glands were usually distinguishable, though hard. There were cases, however, in which radium had given good results. Something could always be done for patients who came for *x*-ray treatment of recurrence after surgical removal of the breast. He advocated large doses of *x* rays; in his experience the small dose was of no use. He received far fewer requests for post-operative treatment from surgeons who used diathermy as opposed to the scalpel, and he thought it safe to assume that in such cases recurrences must be fewer. Following up was an essential factor in the treatment of carcinoma of the breast; some patients had attended his department for thirteen or fourteen years. Involvement of the other breast had been uncommon; in fact he did not think he had ever seen it in cases under *x*-ray treatment. Cases diagnosed as sciatica or rheumatism, but which ultimately proved to be due to metastases involving bone, reacted successfully to deep *x*-ray therapy. Medium therapy was valuable in breast carcinomata, but he had seen damage done by it, even to destruction of the costal cartilages. Once a patient had had carcinoma of the breast the practitioner, on a complaint of rheumatic pains, should never be satisfied with such a diagnosis as rheumatism or sciatica without making sure that he was not overlooking a secondary carcinoma.

Dr. R. MCWHIRTER of the Royal Infirmary, Edinburgh, addressed the congress on radiosensitivity in relation to the time–intensity factor. His remarks were based on 140 separate experiments, necessitating between 500 and 600 applications of radium or *x* rays of different intensities, during which the total period of treatment and total dosage were constant. In the study of the effect of gamma-ray intensity the effect produced on normal skin was first determined. The intensity was varied by 106 times, and the reactions were all similar to one another. Next, the effect of variation of gamma-ray intensity on superficial tumours was studied, and, as the result of experiment, 4,500 *r** was selected as the minimal lethal dose for rodent ulcers. For carcinomata a dose of 5,000 *r* was considered suitable. On the whole, it appeared that low-intensity methods gave no better results than could be obtained with high intensity under the conditions of the experiment. There were too few cases in the *x*-ray series to be conclusive, but the wide range of intensities employed demonstrated variations with intensities normally used in practice. Should further experiments show that a more marked erythema resulted from high-intensity methods it would remain to be demonstrated that the damage to the tumour had not also been proportionately greater before any claim could be made to justify the expense of low-intensity methods.

Dr. J. STRUTHERS FULTON spoke on skin tolerance in relation to radiation intensity. With *x* rays generated at potentials of the order of about 2 kV and delivered at the common intensities in excess of 20 *r* per minute, it was not possible to deliver the same physical dose as might be administered by continuously applied radium without subjecting the tissues to considerably greater damage. If that difference in tissue response was associated primarily with the intensity factor as distinguished from that produced by the quality or wave-length of the radiation, it was reasonable to assume that one ought to be able to demonstrate the difference in the biological response to radiation delivered at the same wave-length but at different intensities. He described some careful observations to determine the possible difference in the response of the tissues to identical quantities of radiation delivered over some total period of time but at different intensities. His conclusion was that in all cases in which comparative observations were made a demonstrable difference was found in the reactions produced in the skin by identical doses of radiation delivered at different intensities. The reaction in each case was more marked over the area treated at the higher intensity. In the initial stages of the reaction little or no variation was discernible between the areas treated at low and at high intensity, but as the reaction developed a difference became increasingly manifest, and when the reaction subsided there was invariably a greater degree of permanent skin damage to the area treated at higher intensity.

* The "roentgen," adopted at the Stockholm Congress, 1928, as the unit of quantity of *x*-radiation, specifying the degree of ionization produced in a definite volume of air.

Diagnostic Radiography

Three papers were read in the session on diagnostics. The first was on ventriculography, by Dr. M. H. JUPE. He urged that the radiologist should carry out the whole investigation involved in ventriculography once a patient with air injected into the ventricles was handed over to him by the surgeon or physician. There could, of course, be no cut-and-dried routine, but it must be strongly emphasized that the handing over of such cases to radiographers was pure waste of time. In mentioning contra-indications Dr. Jupe said that all methods of air injection were dangerous in cases exhibiting clinical evidence of severe rise of intracranial pressure. In ventriculography, however, the air could be removed and pressure relieved; therefore this procedure was less dangerous than encephalography, where the air could not be removed. The radiologist would wish to have the maximum amount of air that he could persuade the surgeon to inject, but the patient's reaction would be proportional to the amount of air injected, and, therefore, the least that would allow of diagnosis should be used. A large injection frequently rendered the whole examination useless. Radiologists should bear in mind the extension of the frontal lobe. It was apt to be regarded as reaching back as far as the posterior end of the frontal bone, but actually it went much further back.

The subject of gastro-intestinal neoplasms was brought forward by Dr. E. W. TWINING. In a carcinomatous ulcer one could see very distinctly by *x* rays the character of the edge, with the filling defect. A chronic indurated ulcer tended to project beyond the lumen, and if it had a rolled-over edge it was less massive, more rounded, and smoother. Ulcers which occurred in the prepyloric part of the lesser curvature were particularly difficult to diagnose. He had recorded four cases showing the meniscus sign—two were malignant and two innocent. The smallest polypus he had even seen, with the stomach filled had appeared and disappeared, popping about on the waves of peristalsis like a bit of cork at the edge of the sea, but with a small filling of the stomach it was fairly easily detected. It showed a streak which represented apparently the stalk of the polypus. Prepyloric lesions were notably difficult to diagnose. Carcinomata tended to be on the side of the lesser curvature, and also to produce indrawing of the greater curvature. Ulcers tended not to produce much indrawing of the greater curvature; growth also produced a tapering of the pylorus more than did ulcer, but that was not an invariable rule, for tapering of the pylorus, strongly suggesting malignancy, had been found with simple ulcers. Among other lesions discussed was chronic hypertrophic stenosis, Dr. Twining remarking that the lesion was probably a continuation of congenital stenosis into adult life.

The final paper was on fungoid infections of the lungs, by Dr. R. FAWCITT. He described an infection from mouldy hay, which he termed "bronchomycosis feniseciorum." The fungus *Aspergillus penicillium* had been isolated from the sputum in all his cases. Hay was the supposed causative factor, and the condition occurred only when the hay was mouldy. The cases so far recorded related only to people of the farming class, who by their occupation were brought into contact with the fungi. The grasses, and presumably their dust, contained silica, and a higher silica content of the lung would be expected if hay dust itself were the cause, but the silica content of the lung in the only patient that had died and on whom a post-mortem examination was held was less than normal. The post-mortem appearances in the lung were very similar to those described by Virchow, except that no nodules were reported. The curative effect of potassium iodide in most of the cases was very marked, potassium iodide being the recognized fungicide. The aspergillus group was known to be pathogenic. According

to Castellani the cases could not be considered proved until the lesions had been produced in the lungs of guinea-pigs or rabbits. Dr. Fawcitt said that he was intending to follow up *x*-ray appearances in animals which he had inoculated with the sputum. His investigations into the subject of bronchomycosis had impressed upon him the fact that mycology was in itself a lifetime study, and that the lot of clinical pathologists would continue to be difficult until the dispute as to the classification of species of fungi had been settled. The literature of bacteriology was sadly lacking in matters mycological, and most books of reference on the subject were out of date. The diagnosis of these conditions called for co-operation between clinician, pathologist, and radiologist.

IMPERIAL CANCER RESEARCH FUND

GENERAL COMMITTEE MEETING

A meeting of the General Committee of the Imperial Cancer Research Fund was held in Queen Square on December 4th, the Duke of Bedford presiding. The chairman of the Executive Committee, Sir Humphry Rolleston, moved the adoption of the thirty-third annual report, a summary of which appeared in our last issue (p. 1116). The motion was seconded by Dr. Arthur MacNalty, representing the Ministry of Health, and carried unanimously. The director of the Fund, Dr. W. E. Gye, said that as the work of the laboratories during the past year was under the direction of Dr. J. A. Murray he could not describe it from first-hand knowledge. He proposed, therefore, to summarize the present position of cancer research. The rapid accumulation of new facts since the war had made cancer research not merely interesting but exciting. It had been established that cancer occurs in all vertebrate animals, was local in origin, and was confined in the first instance to a small group of cells which by growth and multiplication formed a tumour ; it then spread by invasion of surrounding tissues and by means of detached cells, which were carried by the blood and lymph streams to distant parts. The transplantability of tumours had been studied and the general properties of cancer cells investigated. Three main lines of investigation were being pursued: the production of tumours by means of carcinogenic agents, the study of the metabolism of the cancer cell, and the study of tumour viruses. It was now easy to start tumours of the skin, or of the subcutaneous tissues, by the application of one of a number of pure chemical substances, most of which had been prepared by Professor Kennaway and his colleagues at the Cancer Hospital. The culminating point of these researches had been reached by Dr. Lacassagne, who showed that cancer of the breast could be produced by the application of " oestrin " to the skin of male mice. His observation had been confirmed at the Cancer Hospital, London, and by Dr. Cramer and Dr. Horning in the Cancer Research Fund's laboratories. Investigations with carcinogenic compounds had confirmed the clinical observation that human cancer was frequently associated with chronic irritation, and experimental work had shown the importance of the early recognition, and treatment, of precancerous conditions. The workers in the Fund's laboratories had already started experiments which aimed at resolving the apparent contradiction between the production of a tumour with pure chemicals and the propagation of tumours with viruses. In these experiments negative results were frequent, even after years of work, and it was therefore the duty of institutions, such as the Imperial Cancer Research Fund, which had an independent position and a traditional interest in broad scientific issues, to undertake those laborious researches which, superficially, might appear to be of purely academic interest.

The Duke of Bedford, speaking from the chair, deplored the death of Sir John Rose Bradford. Sir John had been closely associated with the Cancer Research Fund from its early days, and an appreciation of his services is recorded in the annual report. The President also paid tribute to the services of Dr. Murray, who retired only this year. He understood that negotiations were in progress for leasing certain property in order to erect more extensive laboratories. This was particularly desirable in that Dr. Gye was anxious to co-operate closely with other cancer research workers, and wanted, therefore, to invite guests from at home and abroad to work in the laboratories. From a financial point of view the Fund now showed a surplus instead of a deficit as in the previous year, but research was still a very costly business. Progress would be hastened if only the public would increase the support it had already given.

Three vacancies in the trustees of the Fund were filled by the election of Sir Malcolm Hogg, deputy chairman of the Westminster Bank, Ltd., Sir Lynden Macassey, and Mr. W. Girling Ball, F.R.C.S. Dr. J. W. McNee then moved the vote of thanks to the president, the Duke of Bedford. He referred to the great interest taken by His Grace in the Fund over a long period of years. Sir D'Arcy Power seconded this proposition, which was carried with acclamation.

FACTORY SURGEONS' DINNER

SUGGESTED EXPANSION OF MEDICAL INVESTIGATION IN INDUSTRY

The annual dinner of the Association of Certifying Factory Surgeons was held on December 5th at the Langham Hotel, London, under the presidency of Dr. A. GLEN PARK. Among the guests were the Right Hon. J. R. Clynes, M.P., former Home Secretary, and Mr. D. R. Wilson, H.M. Chief Inspector of Factories. In proposing the toast of " The Factory Department of the Home Office," Dr. W. H. F. OXLEY described the greatest work of the Department as being its efforts to stop the terrible exploitation of child labour. These had not been altogether successful for several reasons, one being that the number of factory inspectors was still too small to maintain a constant policing of factories, especially the smaller ones. Not long ago the owners of a factory were fined £40 for employing boys and girls from 6 a.m. to 11 p.m., with only two hours' rest. With regard to the proposed raising of the school age, he hoped that the extra education given would be partly vocational and directed to making the child a good citizen rather than be regarded as a ladder for the university. There were cases in which children who had remained at school with a view to reaching a university ultimately failed in health and brain power.

Mr. D. R. WILSON, in response, said that he thought the present system of appointing the certifying surgeons from among local practitioners was the right one, for they knew the circumstances of the workers, and thus an important link in continuity of medical care was constituted. A fact sometimes forgotten was that when a lad left school, where he had been under constant medical and other oversight, he might go to a factory where he was examined once and then left to fend for himself, without supervision. The records of the school medical officer should be available to the certifying surgeon before the latter made an examination. Another suggestion was that there should be a second examination of a young person in industry in order to ascertain the effect of his occupation upon him. A further response was made by Dr. S. A. HENRY, who said that the association had recently welcomed into its ranks full-time works doctors, and with this access of membership it was now more or less complete in its representation of medical supervisors in industry. A gratifying circumstance was the recent inauguration of a readership in industrial medicine at Birmingham University, for which a former certifying factory surgeon (Dr. H. E. Collier) had been selected.

Sir FRANCIS FREMANTLE, M.P., proposed the health of the association, remarking that its membership, as shown in the last report, had increased by more than ninety, and branches had been formed in London and Glasgow and another was in process of formation in the Birmingham area. The PRESIDENT (Dr. Glen Park), in his response,

dealt with the expansion of medical investigation in industry, and suggested that the age of examination of young persons should be extended to 18 or 20, each of them to be examined annually for the purpose of noting deviations from the normal, a procedure already carried out by many large firms. Record cards of a prescribed form should be kept on which the result of each examination could be stated. This would not occupy as much time as might be supposed, as the majority of those examined would be quite healthy. A further stage, perhaps, would be the investigation of adults, on the basis of records of cases absent for any length of time through sickness or accident ; all persons returning to work after such absence would be seen on commencing duty. None of this work would clash with that of the individual's private doctor ; indeed, the workers who were not so well as usual would be encouraged to see their own doctors. Uncommon cases discovered in the course of the routine examinations suggested would be particularly noted, and further research work, if required, would be done by the medical staff of the Factory Department. The work would require experienced practitioners, but it would represent simply a gradual extension of the work at present carried out by the Factory Department through its medical inspectors and factory surgeons. No doubt small firms would argue that they could not afford this service. The increased cost of production could be met by good organization. By grouping the smaller firms into units and dividing the costs on an agreed basis the expenditure by each firm should be such that the costs of production would not be affected materially. All the primary investigations could be very well done by the part-time surgeon attending to the details of the prescribed form as required.

Two responses were made to the toast of " The Visitors," which was in the hands of Dr. O. FIELD, chairman of the London and Southern Branch of the association. Mr. J. R. CLYNES assured the company that he could be relied upon to support any proposal brought forward for advancing the salaries and status of the certifying factory surgeons. As an old trade union official, he asked, what else could be expected of him? He gave high praise to the medical profession as representing the most beneficent and indispensable of national services, and he welcomed any step which would bring medical service into closer touch with the factory and workshop life of the country. Sir HENRY FILDES, M.P., also replied, and the toast of " The President " was given by Mr. C. ENTWISTLE, Member of Parliament for the president's own town of Bolton.

"NUFFIELD HOUSE" AT GUY'S

BLOCK FOR PAYING PATIENTS OPENED BY THE PRINCE OF WALES

The Prince of Wales opened, on December 10th, at Guy's Hospital, a new wing for paying patients, to be known as Nuffield House, Lord Nuffield having given £73,000 for its erection and equipment. The building, which is of five floors, is situated at the southern end of the open space known to Guy's men as the " Park," and is so designed that all the rooms look into the hospital grounds and every one of them gets the morning or afternoon sun.

The New Building

The ground floor is occupied by administrative offices, waiting rooms, and lounges, and leading off the main block are two operating theatres with anaesthetic and sterilizing rooms attached, while in the basement is an *x*-ray department. The operating theatres and also the kitchens are so separated from the patients' rooms that the smell of anaesthetics or of cooking cannot spread to other parts of the building. Another thoughtful arrangement ensures that patients on their way to the theatres cannot be encountered by visitors or other patients. The sanitary arrangements of the whole institution are on the most modern plan, as, for example, the superheated steam chamber for the cleansing of all utensils.

The four floors for patients' accommodation contain fifty private rooms and twenty cubicles. Each of the cubicles is separated from the rest of its suite of four by walls on three sides, and on the fourth by thick curtains which can be drawn at will. Each patient has his own clothes cupboard, and there is a space common to each group of cubicles where the patients who can get up may sit by the fire. The private rooms have been designed with a view to securing comfort and restful effects. Every door, by a braking device, resists slamming, and closes in perfect silence, and the floors of the corridors are covered with rubber. All the rooms have fixed basins for hot and cold water, an electric fire, plugs for telephone and wireless, and convenient lighting arrangements. Heating is by a system of pipes set in the ceilings, but the occupant of each room is able to regulate the heating to his requirements. On the upper floors some of the rooms open on to private verandahs, and others have a private bathroom and lavatory adjoining. A small number of rooms are provided for obstetric cases. On the top of the building there is a large roof garden, with a central portion enclosed as a sun lounge.

The fees, including maintenance, nursing, and drugs, are, for the private rooms, seven, nine, or ten guineas a week, according to situation ; for private room and bath, twelve guineas ; and for the cubicles, five guineas. The cubicles are reserved for patients whose total incomes do not exceed, in the case of single persons, £350 per annum, married persons £450, and married persons with children £550. Patients are not restricted to the professional services of the hospital's medical and surgical staff, but may be under the care, subject to the approval of the hospital superintendent, of any person of consultant rank. When the building is fully occupied about fifty nurses will be employed. The building opens for patients to-day (Saturday), and we understand that two floors will be immediately occupied.

At a Press luncheon preceding the ceremony it was mentioned that over fifty years ago twelve cubicles were opened at Guy's for patients of limited means. Later the beds in the paying wards were increased to twenty-three, and in recent years to twenty-nine. Under the original scheme, made possible by Lord Nuffield's generosity, forty-five beds were to be provided, but when Lord Nuffield laid the foundation of the house rather more than a year ago he expressed his intention of making an additional gift to raise the number to seventy.

Opening Ceremony

At the brief opening ceremony Mr. F. P. WHITBREAD, the retiring treasurer of the hospital, welcomed the Prince and gave a description of Nuffield House.

The PRINCE OF WALES said that the new house was a notable addition to Guy's. For years past the hospital had provided a very limited number of beds for patients of moderate means, but for a very long time an ever-increasing though unsatisfied demand for pay-bed accommodation had been experienced. Thanks to the generosity of Lord Nuffield they now had this up-to-date home for paying patients to which he had contributed the entire cost of construction and equipment, amounting to over £70,000. King Edward's Hospital Fund for London, of which the Prince was president, had recorded its considered opinion that the provision of pay-beds had proved to be a very valuable addition to the voluntary hospital service, and that a material extension of this provision was urgently required ; also that such an increase, with due safeguards for the maintenance and extension of the ordinary beds, would be for the advantage of patients of all classes, of the hospital itself, and of the voluntary system as a whole. Thus the King's Fund would thoroughly endorse what had been done at Guy's.

Before declaring the house open the Prince made the announcement that Mr. Whitbread, who had been treasurer of the hospital for the last eleven years, was retiring. The governors had accepted his resignation with great regret, and had placed on record their unanimous appreciation of his faithful and distinguished services to the hospital. With this tribute the Prince, as president of the hospital, associated himself most cordially. To their

great delight, he said, Lord Nuffield had consented to become treasurer of the hospital as from that day. Having known Lord Nuffield and his generous character for a number of years, the Prince thought that the hospital was extremely fortunate in having acquired him; and there was no more appropriate occasion than the present for making the announcement.

Lord NUFFIELD spoke of the pleasure it had given him to provide a means of alleviating the suffering of many people for whom the ordinary wards were not intended and who could not afford the private nursing home.

His Royal Highness then left the out-patient hall where the company were assembled and was conducted across the "Park" to Nuffield House, where the architect, Mr. W. J. Walford, presented him with a key with which he opened the building, afterwards making a tour of the house. On Wednesday, Thursday, and Friday of this week the house has been open to inspection by members of the medical profession.

VOLUNTARY EUTHANASIA

THE NEW SOCIETY STATES ITS CASE

The Voluntary Euthanasia Legalization Society held its inaugural public meeting on December 10th in the Great Hall of B.M.A. House, Tavistock Square, London. The hall was three-quarters full. Lord MOYNIHAN, who presided, said that the object of the society was to obtain legal recognition of the principle that in cases of inevitably fatal illness in which agony reached, or perhaps overstepped, the limits of human endurance, the sufferer should have the right to demand, and the society the right to give, the means of relief. There were cases of which it might indubitably be said that during the brief remainder of life the agony would be intense and the end certain. It would be asked whether they had any intention of seeking to include other cases than these in their demands to the legislature, such cases, for example, as those of mongolian idiots or persons suffering from senile dementia. They were asking for no such authority. They realized also that there were certain denominations within the Christian Church whose members had no right, and could never from ecclesiastical authority obtain the right, to such relief and release as that for which the society was asking legal sanction. He asked such to stand aside and not refuse the relief to others.

Dr. C. KILLICK MILLARD, honorary secretary, read letters of regret for absence and support for the movement from, among others, Lord Ponsonby, Sir Frederick Menzies, Sir P. Varrier-Jones, Mr. McAdam Eccles, Sir John Robertson, Sir Arnold Wilson, M.P., Miss Eleanor Rathbone, M.P., and a small number of well-known clergymen. He added that the subscription to the society was the minimum of five shillings, once only, not annually, for it was hoped the society would soon disappear, owing to the success of its efforts.

Mr. C. J. BOND, F.R.C.S., chairman of the Executive Committee, said that the introduction of this subject in its present form dated from Dr. Millard's presidential address to the Society of Medical Officers of Health in October, 1931. Everyone, especially doctors, would welcome the change in public opinion of recent years. He could recall the harsh way in which attempted suicide was dealt with. To-day a much more humane effort was made to deal with the troubles which had led to the attempt. But for such a change any such movement as theirs would have been impracticable. Civilized man was being called upon to exercise increasing control over human development and human life, meaning control at both ends, entrance into and exit from life, but in order to exercise this control wisely there was needed a truer conception of the value of life, which consisted not in living, but in living usefully and happily. The population was an ageing one, with a larger relative proportion of elderly persons—individuals who had reached a degenerative stage of life, in which cancer and other disabling diseases tended to occur. Thus the total amount of suffering and the number of useless lives must increase, and this problem required wise handling. To talk of the proposed Bill as a Bill to promote murder and the doctor working under it as a public executioner was beside the point. He added that to-day they were concerned only with voluntary euthanasia, but "as public opinion develops . . . further progress along preventive lines will be possible."

Dr. KILLICK MILLARD gave an outline of the proposed Bill. The sufferer must sign an official application form, his signature duly attested by two witnesses, one of them of a specified status. He must also obtain two independent medical certificates that he was suffering from incurable disease likely to involve severe pain. These would be sent to an official whose duty it would be to see that the case was a proper one to come under the Act, and if satisfied he would grant the necessary permit, not to be acted upon until after an interval of seven days. The practitioner who was to administer euthanasia would be named in the permit, and would hold a licence from the Minister of Health. He hoped he would be known as the "mercy doctor." Dr. Millard discussed the moral, legal, and practical objections.

THE EARL OF LISTOWEL, as the first layman to address the meeting, spoke of indebtedness to the doctors who had had the courage to take up this cause. Canon HAROLD ANSON, Master of the Temple, as representing a group in the Church of England, including the late and present Deans of St. Paul's and Canons C. E. Raven and H. R. L. Sheppard, found no religious or moral objection to the principle of the Bill. The Rev. F. W. NORWOOD, president of the National Free Church Council, strongly supported the Bill. A civilized society which, though it maintained capital punishment, refused to allow it to be a public spectacle should not condemn loving and sensitive people to watch the lingering death of one dear to them, knowing all the time that their attitude would be indefensible if the sufferer were a dog.

Questions and Objections

Questions were invited from the audience. One questioner asked for some indication as to what diseases, and what stages of them, would call for euthanasia, and what methods would be adopted to end life. Dr. MILLARD replied that the method would be for discussion by experts when the time came. It did not follow that only one method would be sanctioned, but any method must be simple, painless, and effective. As to the diseases, it would be difficult to answer that offhand. They thought at once of malignant disease; if there was any disease that justified voluntary euthanasia it would be that. Another questioner declared that all doctors were taught that it was wrong to allow a patient to die a painful death. Why, therefore, was there need for legislation which must be distressing to the patient? Lord MOYNIHAN said it was true that medical men had the power already to relieve suffering, but it was equally true that a tolerance to morphine was established, and larger and larger doses had to be administered, to the detriment of the character of the individual.

Dr. C. O. HAWTHORNE spoke in opposition to what was proposed. He said that although the meeting was held in the House of the British Medical Association, the Association was not responsible for it, and its Council had never even considered the question. He went on to argue that the position contemplated, that of a person suffering severe and prolonged pain with the prospect of a fatal termination, was one of the most exceptional events in medical experience. If the position was to be considered in numbers the mischief to be remedied was of slight dimensions. On the other hand, the remedy proposed was an enormous change in social life. Once asserted, the principle was likely to have extensions. It had already been hinted that pain would not be a necessary condition, but only uselessness. Further, a person suffering severe and prolonged pain was in no condition to exercise a calm judgement or to appreciate fully the issues involved in his decision, and the state of mind of his relatives was almost equally unbalanced. Was there not something repulsive in the idea of a family council to decide whether a father or mother should be urged to or deterred from suicide? The tribunal which would be

called upon to give a conclusive verdict might make mistakes. Again, this procedure was presented as a great act of benevolence. Then the right person to perform it was not the doctor, but the relative or friend. How many of those who had spoken would give the cup of poison to a dear one? The reluctance to take part in this formidable and dramatic ritual was due to the sound human instinct that their responsibility was to preserve life, not destroy it.

Resolution Adopted

Lord MOYNIHAN said that he had allowed Dr. Hawthorne to go on because he thought he was putting up a poor case, and thereby he served their own. However exceptional the condition might be for which relief was sought, those who had seen it would feel that justice was on their side. Dr. Hawthorne had made the unworthy point that doctors were capable of making mistakes. In the kind of case they had in mind there was no possibility of doubt whatever. As for Dr. Hawthorne's last question, if it were the person he himself loved most in all the world he would be ready to agree to act under circumstances such as he had described.

The resolution—

> That in the interests of humanity it is desirable that voluntary euthanasia subject to adequate safeguards should be legalized for persons desiring it who are suffering from incurable, fatal, and painful disease—

was put to a show of hands, and Lord Moynihan declared it carried by about ten to one.

England and Wales

Joint Tuberculosis Council

The chief business of the November meeting of the Joint Tuberculosis Council was the consideration of a report presented by Dr. J. B. McDougall on behalf of the Employment Committee dealing with care and after-care schemes in tuberculosis. Various suggestions were made for Dr. McDougall's consideration, and the circulation of the report was left to the British Legion Press. On behalf of the Institutions Committee, Dr. Blackmore presented a note dealing with Dr. Heaf's memorandum on tuberculosis institutions and chest hospitals. It was resolved: "That this council is of the opinion that the benefits of major surgery for both tuberculous and non-tuberculous conditions should be available to every patient in need of such treatment, and considers that steps should be taken by local authorities to provide facilities at tuberculosis institutions if adequate arrangements have not or cannot be made at other institutions." Dr. Hawthorne reported, on behalf of the Milk Committee, that the conference at Southport of the National Association for the Prevention of Tuberculosis had expressed high opinion of the value of pasteurization in the production of safe milk, and that the Ministry of Health Report took the view that this process did not impair the nutritive value of the milk. A pamphlet on blood sedimentation tests, produced by the Association of Clinical Pathologists, had been circulated to members, and was discussed. A committee, comprising Dr. F. Heaf (convener), Drs. R. R. Trail and W. H. Dickinson, and Professor S. Lyle Cummins, was appointed "to consider and report to the next meeting of council on the standardization of blood sedimentation tests." Dr. Brand gave an account of post-graduate courses held this year. One course at the City of London Hospital for Chest Diseases had been attended by twenty-two members, while ten had followed a study tour in Denmark from June 1st to 15th. Dr. Peter Edwards had held six short intensive courses, and from November 4th to 9th there had been a course at the Brompton Hospital. Very high appreciation was expressed of Dr. Brand's work in arranging these post-graduate facilities. Following receipt of a letter from the College of Nursing asking for advice as to the precautions that should be taken to prevent tuberculous infection among nurses, a committee was appointed, consisting of Dr. Esther Carling (convener), and Drs. Jane Walker and James Watt, to report to the next meeting on the danger to nurses of tuberculous infection and the precautions that should be advised.

The Grove Hospital, Tooting

The new isolation block at the Grove Hospital, Tooting, which was opened on December 6th, has been built as part of the general scheme for the extension of isolation accommodation. It is two stories in height, and provides accommodation for sixty patients in single-bedded wards. The building is related to the other isolation blocks at the hospital, and the wards generally have a south-easterly aspect. In addition to a central entrance, communication to both floors can be effected from the two principal covered ways of the hospital. The wards are separated by partly glazed screens, with duty rooms placed so that the nurses can supervise the patients. Each ward is 11 ft. by 10 ft. by 9 ft. high, giving a cubic space of 990 feet. The additional beds provided in the block require an increase of the residential staff, and an extension of one of the nurses' homes, with other alterations and improvements to the staff quarters, has been arranged. The estimated cost of the work, including furniture and equipment, is £27,874. The accommodation of the hospital, including the new block, is 616 beds.

Reports of Societies

CARE AND TREATMENT OF DIFFICULT CHILDREN

At the meeting of the Medical Society of London on December 9th, with Professor G. E. GASK in the chair, the subject of discussion was "The Care and Treatment of Difficult Children."

Dr. REGINALD MILLER said that children had always been fair game for enthusiastic theorists, and the subject of child psychology, handed on from the medical profession, had turned the heads of the public, though it would be rash to assume that it was the imagination only of the laity that was affected. Widely organized efforts were being made to teach parents how to deal with their children's behaviour. When such teaching was adapted to the capacity of the uneducated the results, if any, might be beneficial, but in the case of the educated, to whom psychological literature was available, he doubted whether the result was going to be as satisfactory as was hoped. There were now parents who were tinkering with their children's psychology as they used to tinker with their insides. To him the besetting weakness of psychologists was the way in which they linked directly cause and effect, in a manner too facile to be convincing. Nor did their explanations of the origin of symptoms by any means tally. They claimed good results for several methods of treatment based on different hypotheses. Far too little credit was given to the beneficial effects of the passage of time and the gradual development of the child. The great majority of children had been included at some time or other in the "difficult" category, though the term was supposed to denote the neurotic and undisciplined, and the delicate and unhealthy, with perhaps a small sprinkling of psychopathic children.

All were agreed as to the importance of the parent in the production of difficult behaviour in the child, and many relied almost exclusively on the modification of the parent's faults. Perhaps there was some danger of going too far in this respect, and by exaggeration increasing the anxieties of parents in the most undesirable way. The striking thing about the reputed causative effects was their number and variety. No child ever lacked opportunities for being difficult if it was so disposed, yet what numbers of children passed them by and remained unspoiled and unspoilable. The causative factors were in many cases opposites: the over-anxious, over-indulgent mother and the cold, neglectful, or jealous mother; the child whose mind was kept unoccupied and at a loose end and the child who over-exerted to keep up with other

children ; over-discipline and under-discipline. To these opposite faults was attributed the mental reaction which was fundamentally much the same in all difficult children —namely, the negative, unreasonable attitude which the child adopted to gain its ends. These faults only acted as determinants, determining the nature and time of the child's symptoms. The thing of vital importance was the innate psychological make-up or temperament of the child and its physical condition. The make-up was the most important single factor in the production of its troubles. The passage of time and the development of the child vastly altered the pattern of its mind, usually to the advantage of everyone. The old-fashioned prognostic phrase that a child would "grow out of it" seemed to be a perfectly accurate forecast of what did in fact take place.

The effect of physical health on child mentality was far greater than would appear from the lip service paid to it by psychologists. Illness profoundly altered the mentality, and the nature of the ill-health might determine the nature of the nervous symptoms. None of the major perversions of appetite, such as persistent refusal of food, apparently volitional vomiting, eating of bedclothes, and so on, arose in children whose digestions were in good order, though the habit might remain after the digestive disturbance had been put right. It was not as a rule difficult to recognize that the difficult child was fatigued or out of health, and these conditions required strict treatment, however interesting the psychological picture might be.

The Ideal Discipline

What, asked Dr. Miller, were the most desirable attributes of a mother? The first essential was that the mother should enjoy her child, regarding it neither as a nuisance nor as a rival, still less as a nervous disease. Her love should be something more supporting than mere protection. Difficult children could not be successfully treated by superabundant protection. What they wanted was a process of desensitization so that normal stimuli did not evoke excessive response. Not every child wanted the same sort of mother—which reminded him what excellent "mothers" some fathers made! The ideal discipline was less a matter of rules and regulations than of atmosphere. One of the advantages of the preparatory school over the home was that the affections were not so heavily engaged ; the child was watched over by someone who was neither shocked nor heartbroken at anything it might do, and therefore misdemeanours ceased to be adventures. But the more blatant difficulties did not arise in children who could rely on getting something analogous to a "sound clip on the ear" if they transgressed unreasonably. As a punishment this had its points, being immediate, unpleasant, and soon over. But if punishment was going to do any child good—and for nervous children it was not to be advocated—it should be ordered in cold blood, with at least some show of reason. Rest in bed was the best of all correctives. This might be used with little or no idea of punishment, but if meant as a punishment confinement or isolation should be regarded as of its essence, and to ensure benefit from the rest books should be allowed and the supply of food not curtailed.

Finally, with regard to psycho-analysis, this was in such bad odour with the physicians of his generation that he felt impelled to pay tribute to the sincerity and even the humility of the group of physicians who were attempting to approach the problems of child psychology by that route. He doubted whether psycho-analysis could ever be the correct form of treatment for the neurotic child, but as a method of investigation it might lead to useful conclusions to be applied in other cases without submitting each fresh child to the process of analysis.

Disorders of Child Behaviour

Dr. WILLIAM MOODIE of the Child Guidance Clinic said there was being created in this country and elsewhere a kind of "psychology consciousness," not entirely confined to the lay public, and this had antagonized scientific thinkers and retarded the study of practical psychology ; this was a pity, psychology being an excellent servant though a disturbing master. The difficult children fell into two classes: (1) children showing disorders of behaviour, also nervous symptoms, suggesting the laying down of the foundation of functional nervous disorders ; (2) delinquents. But the difficult child in the view of the ordinary layman was one who manifested disorders of behaviour or a peculiar mentality. Every normal child behaved in an unusual way at times, because the art of learning to behave in early life was not easy. Behaviour which might be normal enough at one age was an anachronism at another. The problem really related to behaviour occurring out of its usual sequence. Some of these things might be explained by persistence of habit, but if a child was found sucking his thumb at the age of 8 that was generally not the only symptom ; as a rule he was doing other things also unusual. In the behaviour of these difficult children there were syndromes, complexes, significant of deep-lying mental disturbance. Behaviour was the result of two separate but interdependent sets of circumstances—those of the moment and those of the past, and to these must be added the state of health of the individual.

In investigating these difficult children the first essential was a spirit of detachment. Every normal adult had an instinct to control and manage children, and in such an attitude didactic methods might be adopted which in psychology seldom carried far. The investigation must also be careful and detailed ; one must not too readily jump to conclusions. It must comprise complete physical examination, a thing often overlooked in psychiatric work. It must take note of minor as well as major disturbances. An accurate estimation of intelligence was essential, to be done by the proper application of standardized tests with reference to an educational attainment level. Some general estimation of the personality must be framed by direct observation of the child at play and from his history, and a picture of his environment must be obtained.

The Question of Treatment

For purposes of treatment he classified the children into groups. The first were stable children who had to try to adapt to abnormal conditions in their environment. Here the treatment must be carried out by way of the parents or guardians, as they were responsible for the abnormal conditions. The second class consisted of children who, though relatively stable, had been taught a bad style of living and so had difficulties in adaptation. Most of the anxious, excitable, thin, overactive children came into this category, which was a very large one. The causes were lack of outlet for mental energy, also a feeling of insecurity. The children were often worn out by their own activity. There was only one remedy for this excessive energy, and that was academic work, not hand work, games, or art, but reading, writing, and arithmetic, and, for security, a decent, stable home and reasonable discipline. The third category consisted of unstable children who could not adapt easily to circumstances. These children should be encouraged to express their thoughts and discuss their validity with the physician. In the case of the neurotic child something more was called for ; there must be an understanding of the child's unconscious. In the child's unconscious there were many wishes which were the expression of needs. These came into consciousness serially as the child developed. The aim of therapy was to release these repressed wishes. This could be done by means of play, and as such expression had hitherto been forbidden in the child's unconscious by authority, the psychiatrist might now represent authority which did not forbid but encouraged such expression. This use of expression in symbolic play with interpretation was almost an analytical procedure, but most of the psycho-analytical school believed that the material represented in symbolic play was sexual, whereas he did not think this was necessarily true. The results of play therapy were very interesting and sometimes dramatic.

The Psychopathic Child

The last class consisted of the mental defective and the psychotic. In this group of children a large amount of research remained to be done. The mental defective pure

and simple he considered very rare. The condition was often found plus distortion, plus psychosis or psychoneurosis. It was a mistake to write off these children as just defective. Even in defectives and psychotics there was room for a great deal of treatment. As for delinquents, he examined last year over 1,700 who had been brought before London courts. Incidentally he never found a case of kleptomania (Dr. Miller had said the same thing). These children were slightly dull, but not markedly so. In all of them there was an aggressiveness and a resistance to authority which went back in many cases to disturbed marital conditions in their homes.

Dr. W. G. WYLLIE referred to a group of children aged from about 9 to 14 who were unable to read or write, suffering from a kind of word-blindness, and were therefore kept down by an exasperated teacher or regarded as mentally deficient, yet on an intelligence test by a competent psychologist they came out 100 per cent. At present such children had just to trust to the luck that their parents, not knowing what to do with them, would bring them for medical advice. Dr. C. F. HARRIS underlined parental lack of discipline. It would be a mistake to make a clinical entity of difficult children ; many of them were normal human beings in abnormal circumstances. Dr. R. A. YOUNG also emphasized parental control. The pendulum was beginning to swing back, and the next generation might well be more severely brought up. Dr. JAMES said that the question was really that of the difficult parent. He had got into the habit of talking more to the parent than to the child. The sense of economic security in the home had an effect on the mentality of the children. Dr. D. W. WINNICOTT said that in the case of delinquent children lack of parental love was a very important factor. Something might be traced back to lack of love of the unwanted infant. In his own out-patient department he did not find much serious mismanagement by parents. He wished there were more people trained to deal not with parents, but with children.

Dr. REGINALD MILLER asked what was Dr. Moodie's experience of children brought up in the artificial environment of flats ; also whether much nervous disorder or behaviour trouble was found among children of divorcees. Dr. MOODIE replied that he thought more depended on the parent than on the type of dwelling, but of course it was one thing for a child to live in a flat near a park and another to live in a flat with no access to open spaces. At one school he was accustomed to see a number of children who had come from broken homes, and he had observed among them a marked feeling of insecurity, but under the conditions of the residential school they settled down quite well. One analyst in France, faced with the problem of the difficult child, analysed the parent, and sent the child to a boarding school—kept by his wife!

ACUTE FRONTAL SINUSITIS

At the meeting of the Section of Laryngology of the Royal Society of Medicine on December 6th, with Mr. LIONEL COLLEDGE in the chair, a discussion took place on acute frontal sinusitis.

Classification and Clarification

Mr. F. HOLT DIGGLE, in opening, spoke of the need for some clarification of the merits and demerits of the various methods of treatment and their appropriate use. If conservative measures were unduly prolonged serious complications might develop ; on the other hand, too precipitate surgery was often equally disastrous. He classified acute frontal sinusitis into: (1) pyrexial types, with temperature 100° to 104° F. and severe toxaemia, and (2) apyrexial, including so-called subacute types, with temperature 99° to 100° F. Either group might be associated with a homolateral antritis, with or without oedema of the soft parts. Pyrexia was the all-important factor in determining treatment. In his series of cases 40 per cent. recovered completely by conservative measures alone, but all these were of the apyrexial or subacute type. In pyrexial types there was need for prompt treatment, by serum therapy, of the blood infection, as well as local measures. He was still old-fashioned enough to prefer the polyvalent anti-streptococcal serum given into the flank in large doses, up to 40, 60, or 80 c.cm. He went on to discuss the indications for surgical drainage in the two groups, and the risks attending hasty surgery in the pyrexial types. In the apyrexial types intranasal drainage was relatively safe. He placed no great reliance on anterior middle turbinectomy ; usually it was best combined with ethmoidectomy with intranasal drainage. The pyrexial groups presented the more difficult problem, and here any form of high intranasal surgery had risks. Simple external drainage was of value, even when oedema was not present. Needless risk was involved in obliterative operations. He advised non-interference with the ethmoid in the pyrexial types. In treating associated maxillary sinusitis aspiration facilitated frontal drainage, but rarely cured. In the apyrexial group antritis demanded earlier surgical drainage of the frontal sinus and antrum rather than repeated aspirations. In the pyrexial group he relied more on repeated aspirations if there was a response to conservative treatment.

Mr. T. E. CAWTHORNE said that it was important, in dealing with frontal sinusitis, to avoid extensive surgical procedures during the acute stage. Neglect of this rule would subject the patient to a risk of spreading osteomyelitis, meningitis, or even cavernous sinus thrombosis. The majority of cases would respond to conservative treatment, and any extensive intranasal surgery was to be avoided. Treatment of infection in neighbouring sinuses was important, as it was uncommon to find acute frontal sinusitis without an ethmoidal cell or an antrum full of pus. Conservative treatment should be directed towards the clearing up of these latter sinuses in order that natural drainage from the frontal sinus might be encouraged. External operation was only indicated when there was evidence of extension of pus into surrounding tissues, or when there had been an inadequate response to at least ten days' conservative treatment. He likened precipitate surgery in the early stages of acute frontal sinusitis to pressing the trigger of a gun to see whether it was loaded. Many serious complications which occurred were the result of untimely operative intervention.

Conservative Treatment

Mr. WALTER HOWARTH said that he found himself very much in sympathy with Mr. Cawthorne in his strenuous advocacy of a more conservative line of treatment than the textbooks would suggest. Personally he thought that Mr. Holt Diggle's figure of 40 per cent. of cases recovered as a result of conservative measures alone was very much too low ; it ought to be something like 80 per cent. In his clinic a considerable number of cases of frontal sinusitis were seen, but none or very few were operated upon. He himself did not believe even in the removal of the anterior end of the middle turbinate, though he thought some attempt should be made, where blockage was complete, to enter the frontal nasal duct. With regard to external operation, when such was necessary—and it was necessary only in a very few cases, because even those with marked oedema of the eyelids would settle down under conservative treatment—this should be as limited as possible, just an incision to let out the pus, and later, when the toxic condition had settled down, some further manipulation might be undertaken.

Mr. C. A. S. RIDOUT also emphasized the value of conservative treatment. Nevertheless, there were cases of marked obstruction in which it was necessary to do something further, but as little as possible should be done. He had seen a case years ago in which, as a result of removing the anterior end of the middle turbinate and passing a rasp into the frontal sinus, a fatal meningitis was set up.

Mr. HAROLD KISCH was pleased to note such a feeling of conservatism with regard to the frontal sinus area. He had looked up the records of treatment by the surgeons of the Central London Throat, Nose and Ear Hospital, and he could not find a single case of simple

sinusitis which was submitted to operation. The routine treatment seemed to have been lavage of the antrum; he believed that in the vast majority of cases of frontal sinusitis suppuration in the antrum occurred, and lavage of this cavity was of very great importance. The case was rather different with chronic frontal sinusitis, which would never be cured by washing out the antrum. A certain number of acute cases, however, would yield to that procedure. With regard to serum treatment, in haemolytic streptococcal infections he had found lact-albumin of considerable use.

Mr. T. B. LAYTON said that his own conservatism was of even deeper dye than that of previous speakers. Nowadays he did not even wash out the antrum. He had long ago given up the removal of the front end of the middle turbinate. Surgical intervention was advisable in acute infections only when there was threatened spread to some lethal area. He would not say that every single case would recover if left alone, but it was quite false to suppose that because one case required more radical measures there must be intervention in every case. Lister had said that inflammation tended to get well of itself if the cause of the irritation were removed; and a present-day surgeon, Mr. Wilfred Trotter, had remarked that a microbe could not be killed with the knife. Anatomically there was no such thing as frontal sinusitis. The frontal sinus was merely one of a group of anterior ethmoidal cells all of which, in their development, grew up towards the angle where the cranial cavity, the nasal cavity, and the face met. One of these went a little further and received the name of the frontal sinus, but probably all the other cells were also involved. He believed that the maxillary sinus was also always inflamed, even if pus could not be found in it.

Mr. MUSGRAVE WOODMAN said that he was prepared to go further than Mr. Howarth and to say that from 90 to 95 per cent. of acute frontal sinusitis cases would clear up with local treatment only. He had long since abandoned removing any portions of the turbinate bone and doing any nasal operation in this condition. If a case presented itself in which it was really necessary to do something it should be the least possible operation, involving the minimum interference. Mr. LESLIE POWELL agreed as to the value of conservative treatment, but described two cases which he did not think could have got well had they been left alone.

Radiotherapy in Treatment

Dr. W. A. TROUP pleaded for a wider use of radio-therapeutic methods in the treatment of acute sinusitis. These were widely used in America and on the Continent, but in this country their claims in this connexion had scarcely been investigated. The treatment should only be carried out by physicians who had a working knowledge of sinusitis and its complications, and should not be relegated to a masseur or sister in a hospital. The treatment might consist of infra-red radiation locally, ultra-violet post-nasally, general ultra-violet radiation in suitable cases, and in a certain number of selected cases short-wave therapy. Short-wave therapy might in certain cases give rise to secondary toxaemic symptoms. The radiations produced relief of pain, and helped to establish drainage unless gross obstruction was present.

Mr. HAROLD DOWNER described a case which he showed to the meeting, of a man aged 29 admitted to hospital with a large frontal swelling and slightly raised temperature, in which operation was performed. Harmer tubes were inserted into each frontal sinus, and the patient was discharged nine days later much better. The tubes were removed after some five weeks, but unfortunately drainage was not satisfactory and first the right tube and afterwards the left had to be reinserted. Since then convalescence had been uninterrupted. The pus in this case, on culture, grew pneumococci, and there was a perforation of the bone over the anterior wall of the left frontal sinus.

Mr. E. D. D. DAVIS said that there were cases in which one's hand was forced in the direction of intervention, as, for example, where there was excessive pain. The history of a previous attack always made him a little more anxious. He did not see why a limited middle turbinectomy should not be done. There were cases in which a timely operation did help considerably, and yet other cases in which one was forced to operate. Mr. V. E. NEGUS said that he had been taught by Sir StClair Thomson that lavage of the antrum was an admirable thing. One of its advantages was that it cleared the natural ostium. By re-establishing the natural opening with ciliary drainage there was a chance for the condition to cure itself. Mr. E. J. G. GLASS described a case within his experience, and Mr. J. B. HORGAN mentioned the stringent and prolonged effect of using 1 grain of ephedrine with 17½ grains of cocaine in 1 ounce of olive oil, warm, for dropping in the nose.

THE MEDICAL WITNESS

The West London Medico-Chirurgical Society, under the chairmanship of Dr. BERNARD MYERS, president, held a meeting on December 6th to discuss the question of the medical witness.

Sir BERNARD SPILSBURY said that the chief handicap of the medical man in the witness-box was that medicine was not an exact science. Legal people did not understand its imperfections, and expected the medical witness to be definite and positive. The limitations of the medical man's knowledge constantly tempted him to speculation, and he suffered from the difficulty of interpreting medical facts, especially in clinical work. Variation in opinion between expert witnesses who were merely dealing with facts observed by others was not surprising, considering that direct witnesses to fact commonly differed widely, as could be seen in any running-down case. Many medical witnesses were hampered by their temperament: some could not discipline their minds to critical and unprejudiced consideration; others were nervous, shy, or suspicious, or unwilling to admit their lack of knowledge. Medical men carrying out necropsies should be given time to make certain of their facts and to consider their conclusions carefully; they should write down minor points as well as make the usual short notes, for details were easily forgotten. They should also take time to review findings, consult authorities, and discuss the matter with their colleagues. An expert witness should consider the weaknesses of the case, of which he should warn counsel. Sir Bernard cautioned witnesses against prolixity, indistinctness, the use of jargon and superlatives, exaggeration, bias, and loss of temper.

Dr. EDWIN SMITH pointed out that, while a medical man could avoid doing special work for which he did not feel himself fitted, such as ear, nose, and throat operations, he could never escape giving evidence. For this reason Dr. Smith advised medical students to visit the courts and study the problems of the witness. Medical men should keep a written note of every case which had a medico-legal bearing, in such a form that it could be produced in court. He advised obedience to all subpoenas and summonses, however irregularly served—even over the telephone. A doctor who was asked by solicitors to give expert evidence should insist on a written promise to pay a definite sum in advance. It was worth while to learn how to conduct a necropsy well. In dealing with unknown bodies a doctor could often save identifying witnesses much time and expense by making careful measurements and noting distinguishing marks.

The Legal Point of View

JUDGE HIGGINS said that the first quality the court desired of the witness was plain language. A large number of medical witnesses who came before him tried to explain injuries in the most abstruse Greek terms. What, he asked, did a "lesion" mean to an ordinary jury? A registrar in the county court had once asked him if £25 were sufficient compensation for a fractured pelvis, imagining this to be "the little bone in the leg." He wished all medical witnesses, especially when speaking about a bone, would point to where it was and explain what its function was. When choosing between the

opinion of a panel doctor who knew the case intimately and an expert who had only seen it two or three times he was inclined to adopt the opinion of the expert, as he was more likely to have kept himself up to date, and especially as, after a few questions in cross-examination, he often came completely into line with the panel doctor. Dr. SMITH declared that a witness who was paid to give evidence by one side or the other must be subconsciously biased.

Sir WILLIAM WILLCOX said that the medical man gave evidence on the side of truth and justice. He should make up his mind to give his complete knowledge and opinion without any bias. The doctor was in court to speak the truth, the lawyer to put forward his client's case. Public knowledge of medical terms was much wider than it had been a few years ago, and the judge often asked for the technical term. He especially warned the witness against giving a medical lecture, remarking that a clever counsel would have the opportunity of selecting and twisting any part of it. The doctor should avoid trying to be humorous, or the judge got jealous and the jury thought the witness was not being very dignified. The teaching of psychology had unconsciously influenced judges and counsel and directed their attention to motive, both in accused persons and in witnesses. A medical man who had this fact in mind would be prepared for many questions which might otherwise have surprised him. If he remembered that it was counsel's job to support one aspect of the case he would be less likely to lose his temper. Mr. W. MCADAM ECCLES observed that medical witnesses made extraordinary mistakes through forgetting their anatomy.

UNILATERAL MENSTRUAL PAIN

The November meeting of the North of England Obstetrical and Gynaecological Society was held in the University, Sheffield, and Professor MILES PHILLIPS (Sheffield) read a note on unilateral menstrual pain. He said that this term, although somewhat clumsy, was the best that he could devise for a certain clinical group of cases in which severe pelvic-abdominal pain occurred solely in association with the menstrual periods, only and always on one and the same side. Two principal conditions were liable to cause pain of this nature—namely, localized cornual adenomyoma and haematometra in the rudimentary horn of a double uterus. Careful and understanding analysis of the patient's symptoms led one to make a provisional diagnosis sufficiently correct to justify an exploratory operation. Professor Phillips described in detail a number of cases in which the main symptom was pain of a fairly severe nature occurring just at the onset of menstruation. At laparotomy typical adenomyomata were found in the uterus; they were excised with complete relief of the symptoms. The speaker then referred to a series of cases of haematometra in the rudimentary horn of a double uterus. This most commonly occurred on the right side, and led to an erroneous diagnosis of appendicitis. After appendicectomy the symptoms persisted, and were only alleviated by removal of the rudimentary horn later.

Dr. J. W. BRIDE (Manchester) described the case of a calcified foetus with a rudimentary horn. The patient's main symptom was dysmenorrhoea. Professor A. LEYLAND ROBINSON (Liverpool) said that in his opinion these cases were characterized by the fact that there was no variation in the menstrual pain, perhaps with the exception that it got progressively worse. Professor DOUGAL, Mr. STACEY, and Mr. GLYN DAVIES mentioned that they had also come across cases of dysmenorrhoea with causes similar to that described by Professor Phillips.

Chorio-angiofibroma

Dr. C. H. WALSH (Liverpool) described a case of this condition, and said that solid tumours of the placenta were extremely rare. They were of pathological interest, and clinically might be associated with abnormal states of pregnancy and difficulties in labour. The specimen shown was obtained from a patient after delivery of her second child. The tumour of the placenta could be felt, in the early stages of labour, through the external os. The labour was normal, and the puerperium uneventful. The placenta with its two tumours weighed 2½ lb. One tumour was the size of a grape-fruit and the other the size and shape of a cricket ball. They were embedded in placental tissue, and there was a definite pseudo-capsule. The placental tissue did not infiltrate the tumours, which could be shelled out easily. The cut surface was solid and looked like a soft fibroid. Microscopically, they were found to consist of fibrous tissue with oval-shaped cells. In parts there were numerous blood-filled capillaries. The speaker thought that the nature of the tumours was angiofibromyomatosis.

Advanced Ectopic Pregnancy

Three cases of advanced ectopic pregnancy were reported.

Mr. N. L. EDWARDS (Derby) described the case of a 5-para aged 42, who passed through the rectum portions of the foetus, which was subsequently found to be lying in an extra-uterine sac.

Mr. GLYN DAVIES (Sheffield) stated that his patient, 26 years old, was a 2-gravida. Her last menstrual period had occurred twenty-three weeks before he saw her. She had had several shows. An *x*-ray examination suggested death of the foetus, which was presenting by the breech. Since the pregnancy was thought to be intrauterine, an unsuccessful attempt was made to induce labour. Subsequent examination under anaesthesia led to the diagnosis of ectopic gestation. At the operation there was found a right-sided ovarian pregnancy, advanced to about the thirtieth week.

Professor A. M. CLAYE (Leeds) described the case of a primigravida, aged 25, who had complained of abdominal pain for the previous three months. There had been some haemorrhage on several occasions, preceded by six months' amenorrhoea. The patient could feel foetal movements. When seen in September, 1934, the case was diagnosed as missed abortion. Attempts were made to induce labour. Subsequent examination under anaesthesia and a radiography led to a diagnosis of ectopic gestation. At the operation the amniotic sac was found among the intestines from which the macerated foetus was removed. The placental site was in the neighbourhood of the left Fallopian tube, and the placenta and most of the sac were removed. Haemorrhage was not excessive. Convalescence was uninterrupted. The points of interest were: the diagnosis, which was not reached for a very long time in this case, and the treatment at operation.

The PRESIDENT remarked how extraordinary it was that three of these specimens should be shown at one meeting. In cases where the condition was not diagnosed until some time after viability he wondered whether the operation could be delayed in order to obtain a live child. Dr. J. W. BRIDE (Manchester) said that he had found it a difficult condition to diagnose. He thought it safer to leave the placenta *in situ* when operating on these cases. Professor MILES PHILLIPS (Sheffield) had seen six cases of advanced ectopic pregnancy. On three occasions he had left the placenta behind, and had no trouble subsequently. Mr. J. ST. GEORGE WILSON (Liverpool) mentioned a case which he first saw half-way through the pregnancy. He opened the abdomen at term and found the foetus in the broad ligament. He was able to deliver a live infant, and left the placenta in the abdomen. At a later date he had had occasion to reopen the abdomen and found no sign of the placenta. Professor D. DOUGAL (Manchester) referred to a case in which bougies were introduced and passed through the fundus of the uterus. An abdominal operation had to be performed, and the sac containing the placenta together with the uterus were removed.

Vesical Calculus with Pregnancy

Dr. J. W. BRIDE (Manchester) showed a stone removed from the bladder by suprapubic cystotomy. This weighed four ounces and measured 6½ cm. in length by 6 cm. in breadth. Its presence in the bladder was first noticed when an *x*-ray photograph was taken during the last weeks of pregnancy. Caesarean section was performed, since the stone was felt below the presenting part and could not be pushed up out of the pelvis, and because it

was feared that grave damage to the bladder might result if labour were allowed to continue. The speaker referred to interesting cases from the literature of stone in the bladder complicating pregnancy.

CLINICAL PHOTOGRAPHY

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on November 1st, Mr. T. A. Bouchier-Hayes demonstrated a new type of clinical photography. Cases were photographed in the ordinary way and the resulting negative was enlarged on to an *x*-ray film. The photography of post-mortem specimens, particularly brains, was much simplified, and even for pictures of the cut surface of the brain there was no need to use a filter ; artificial light made an ideal photographic illumination. Excessive high lights might be dealt with by removing the effacing surface of the negative. The dark-room procedure was the same as for developing *x*-ray negatives. By this method a permanent, light, and easily filed record was available, needing for demonstration only an *x*-ray viewing-box. Photographs were shown of sarcoma of the scalp, gumma of the scalp, rodent ulcer, naevi, lupus of the face, carcinoma of the tongue, goitres, tumours of the breast, and diseases of the penis and scrotum.

Mr. J. J. Murphy, radiographer to the Richmond Hospital, who was responsible for the technique of the method, said that the photographs of soft specimens were taken directly on a plain *x*-ray film, and that these films were duplicated. It was possible to increase the high lights considerably ; if they went too high, it was possible to scrape off some of the surface of the film. No light filter at all was required. It was possible to use an *x*-ray tank and developer, and so it was not necessary to disturb the dark room so much as if a panchromatic developer was employed. When enlarging, it was necessary to have a background which would not reflect light. The films cost exactly the same as an *x*-ray film, and the expense of the procedure approximated to that of making a lantern slide.

PYOTHORAX

At a meeting of the Devon and Exeter Medico-Chirurgical Society on November 21st, with the president, Dr. F. N. Sidebotham, in the chair, Dr. C. J. Fuller read notes on a case of pyothorax in which he had been associated with Mr. A. A. Gairdner. The patient, a man aged 24, was admitted to hospital on March 9th with a condition of right pyothorax. There was a history of " influenza " five weeks previously, and the possibility of pulmonary tuberculosis had been suggested. On March 13th Mr. Gairdner had performed rib resection, and established open drainage. In response to this the lung partially expanded. On March 29th, no further progress having been attained, Mr. Gairdner exposed the cavity and performed decortication of the right lung, the pleura being stripped over the affected area. By September the cavity had reduced to about 4 by 5 by 3/4 in., and a subsequent local thoracoplasty resulted in a complete closure of the cavity. The case had proved to be a pneumococcal infection, but the delay in diagnosis and admission to hospital had caused structural complications which could only be overcome by the means adopted in this instance. The patient was present at the meeting. He was now in good general condition, and was making an excellent convalescence. Radiographs demonstrating the various features from the patient's admission to hospital until some time after the final operation were also shown.

Mr. Norman Capener remarked on the difficulties met with in correcting the scoliosis associated with cases of this kind. Early cases would respond to exercises, but in those that came to operation late the adhesions often caused a considerable barrier. He congratulated Dr. Fuller and Mr. Gairdner on the fact that whereas in the earlier films scoliosis was definite the deformity could not be detected after the final resection.

At the November meeting of the Zoological Society of London Professor R. T. Leiper, supplementing the report previously made by him on the worm parasites of the okapi living in the Society's Gardens, which had been based on the helminth eggs and larvae recognized during microscopical examination of the faeces, gave an account of the parasites collected at the subsequent post-mortem examination, and described the pathological lesions in the liver, which showed that the okapi had suffered from long-standing hepatic cirrhosis associated with a unique invasion of the bile ducts by numbers of the intestinal nematode *Monodontella giraffae*. There was also extensive parasitic infestation of the rumen and small intestine. About fifteen thousand parasitic worms were collected in a partial examination of the contents of the alimentary canal. So far nineteen species have been identified, and belong to fifteen different genera. Of these, three have been previously recorded from the giraffe and five from domesticated animals.

CORRESPONDENCE

Risk of Explosion in Operating Theatres

Sir,—In connexion with the letter from Sir J. E. Petavel in your last issue, your readers may be interested to learn that the matter has for some time past received attention from the Anaesthetics Committee (Royal Society of Medicine and Medical Research Council). The committee has had the benefit of co-operation with the National Physical Laboratory as regards the electrical causation of the explosions. The committee has been able, largely owing to the investigations carried out for it by the late Professor B. H. Dixon, to point out to anaesthetists dangers which had not hitherto been apparent, particularly in connexion with the mixture of nitrous oxide with other vapours. As regards the determining cause of the explosion of an anaesthetic mixture, in practice this appears to arise in one of two ways, either from the electrification of the table, etc., or from faulty electric apparatus, small lamps, suction machines, and so on. The anaesthetist has learned which of his agents to avoid in the presence of open flame, cautery, diathermy, etc. In the absence of these things he naturally expects to work without the risk of getting an electric shock or of having his apparatus blown to smithereens, whatever anaesthetic he chooses to employ. We may hope that the efforts of the National Physical Laboratory will result in this desired freedom.—I am, etc.,

J. Blomfield,
Chairman, Anaesthetics Committee.

London, W., Dec. 8th.

Sir Maurice Craig Memorial

Sir,—When Sir Maurice Craig, the distinguished psychiatrist, died in January last it was felt by his friends and colleagues that there should be some memorial of one who was a pioneer in the treatment of nervous and mental illnesses, and who contributed such invaluable knowledge to their early diagnosis and prevention. Sir Maurice was a great mental specialist, and with his name must be associated the importance now attached to rest and sleep in cases of nerve exhaustion, the use of small doses of a sedative over a long period, and to the toxic focus as a cause of certain severe mental disorders. He never failed to attach the correct value to the physical condition of his patients, and knew the relative value of the smallest symptoms. His whole life was one of consistent personal service, and his name will be linked with the prevention, and progress in treatment, of mental and nervous diseases. He was never happier than in " opening up the lives " of young people who in one way or another were being repressed or thwarted, or when highly strung

children were brought to him and he was able to protect their nervous systems against the effects of strains and stresses. His power of throwing the whole of himself into the particular troubles of the individual, which gave him his wonderfully understanding and strengthening sympathy, combined with his charm, were invaluable assets in gaining the confidence and affection of patients.

Sir Maurice Craig's greatest public work in the field of mental health was in two directions: his part in establishing the National Council for Mental Hygiene, and in the foundation (with the funds generously placed at his disposal by Sir Ernest Cassel) of the Cassel Hospital for Functional Nervous Disorders. Remarkable evidence of Sir Maurice's hold upon the public was seen a few years ago when he made a broadcast appeal on behalf of the National Council for Mental Hygiene. This appeal produced an overwhelming number of letters from listeners in all parts of the country and from all sections of the community, notably among the poorer classes, who emphasized their appreciation of the work done for the mental health of the nation by Sir Maurice and the Council over which he presided.

The friends of Sir Maurice Craig therefore feel that it would be in keeping with his wishes that sums received for the memorial should be entrusted to the National Council for Mental Hygiene, for the furtherance of the work which he had so much at heart, and to found a "Maurice Craig House," which would become the established centre of the National Council. Such a centre should greatly assist in co-ordinating the work of all voluntary bodies dealing with mental health and the prevention of nervous and mental disorders, and provide, for instance, much-needed meeting rooms for the National Council's various research committees, a library, and an inquiry department to supply the public with particulars concerning treatment facilities, training in all branches of mental health, information, and literature. It is proposed that as a beginning some temporary premises shall be taken, with the object of establishing a permanent "Maurice Craig House" when sufficient funds have accumulated.

We feel sure that in addition to his professional colleagues, friends, and patients there must be many among the general public who would wish to co-operate with us in giving permanence to Sir Maurice's work for the alleviation of human suffering, and that in a manner which would do honour to his memory. Contributions to the fund, which should be marked "Sir Maurice Craig Memorial Fund," will be very gratefully acknowledged by Dr. Eric Wornum, 121, Harley Street, London, W.1, who has consented to act as hon. treasurer.—We are, etc.,

COSMO CANTUAR.
WAKEFIELD OF HYTHE.
SOUTHBOROUGH.
WALTER BRAITHWAITE.
REGINALD WARD POOLE.
A. HELEN BOYLE.
E. FARQUHAR BUZZARD.
ANGELA LIMERICK.
GEORGE CICESTR.

December 6th.

Prophylaxis in Puerperal Sepsis and Pyrexia

SIR,—With reference to Dr. H. J. Thomson's letter in your issue of November 30th, the exhaustive measures employed at the Lanark Maternity Hospital at Bellshill, under the superintendence of Dr. Thomson, to prevent or mitigate puerperal infection are worthy of the close attention of those responsible for the welfare of labouring and lying-in women, especially of those in charge of maternity hospitals.

However, it is not possible to discover from Dr. Thomson's otherwise thorough report in the *British Journal of Gynaecology and Obstetrics* of June, 1935, for how long the rigid use of face masks by attendants and patients, during and after labour, has been insisted on. Should, as is not unlikely, this period coincide more or less closely with that in which calcium sulphide has been administered it would be difficult to decide which measure was responsible for the improved results he records.

It would also be interesting to learn to which, if either, of these two measures Dr. Thomson himself attaches the greater importance.—I am, etc.,

Sheffield, Dec. 3rd. MILES H. PHILLIPS.

Hospitalization of Maternity Cases

SIR,—Professor Miles Phillips, speaking at a meeting of the North of England Obstetrical and Gynaecological Society on October 25th (*Journal*, November 9th, p. 921), stated that he thought there was no doubt that hospitalization (of maternity cases) would extend in this country. He mentioned that in Vienna 96 per cent. of mothers were confined in hospital. The figures for Manchester were 54 per cent. He thought the ideal to be aimed at in obstetrics was a single room for every patient. He advised all young men to go abroad to study hospitalization.

I think the time is opportune for giving the risk of hospitalization—as we know it to-day in this country—a wider publicity, not only among the general public but also among doctors. I speak from outside the hospitals, but twenty years of municipal maternity and child welfare work and general practice have afforded a useful viewpoint.

Until four or five years ago it was rare to see breast abscesses among nursing mothers at the clinics. Now, with the spread of hospitalization, breast abscesses are commonplace, and the "hospital breast abscess" of to-day is a very different thing from the occasional breast abscess one saw ten or twenty years ago, which usually cleared up rapidly under simple treatment. During the last fourteen years, while acting as medical officer at two municipal child welfare clinics in working-class districts in London, I do not recollect seeing a single case of breast abscess among mothers who were confined at home.

Until puerperal breast abscesses are made notifiable as such it will be difficult to gauge how numerous they are. The hospital where the mother was confined is often ignorant of this after-effect of hospitalization, as the trouble does not show itself until after she has left the maternity ward, and, in London at all events, such cases frequently fall into the hands of general practitioners and voluntary general hospitals for treatment.

To show how advanced hospitalization already is in certain districts in London I give figures for two clinics held during the last week in October. At a clinic in a poor working-class area out of twenty-seven babies seen in consultation by the medical officer twenty were born in hospitals (seventeen in L.C.C. hospitals) and seven were born at home under the care of midwives. At a clinic in a better working-class area out of twenty-eight babies twenty-five were born in hospital (twenty-three in L.C.C. hospitals) and three were born at home (two under the care of midwives and one under the care of a doctor). The above figures are, I think, a fair index of the present position, where working-class mothers are concerned, in the districts covered by the two clinics. On November 14th two mothers attended whose cases I consider are very instructive. Similar cases present themselves at every clinic.

Case 1.—Mrs. A. was a young mother who was finding difficulty in breast-feeding her second (14-days-old child), as one breast was practically functionless, as result of severe abscesses, necessitating three separate operations, contracted shortly after the birth of her first child two years previously. Both children were born in L.C.C. hospitals.

Case 2.—Mrs. B. had gone into an L.C.C. hospital for her seventh confinement. Breast trouble did not show itself until the evening of the day she left hospital. She was in attendance twice daily at a voluntary general hospital, a long

distance from her home, where incisions had been made into the breast a few days previously. She was still on tube drainage, and was told that it was necessary to attend at hospital twice daily as the case was unsuitable for attention by a visiting nurse. The L.C.C. hospital concerned had not been notified of this after-effect of hospitalization. Mrs. B. came to the clinic to obtain advice about bottle-feeding—her six previous babies, all born at home under the care of a midwife without trouble of any sort, having been breast-fed.

Puerperal breast abscesses, a cause of great mental as well as physical suffering, except in rare cases do not contribute to the maternal mortality rate, but they are an indication of the risks run in the tainted air of busy maternity wards. That the mammary gland frequently suffers is obvious—the signs are too prominent to be overlooked ; but what of the body as a whole?

No wonder, realizing that Nature did not fit mothers out at all well for community confinements, obstetricians are now calling out for a " single room for every patient." I realize that my work touches the problem of maternity only in a restricted way, but would it not be useful to obtain the experiences of child welfare officers on the question of present-day hospitalization and its after-effects on the health of mother and child?—I am, etc.,

Woman Medical Practitioner and Welfare Officer.

December 2nd.

Cancer Research

Sir,—In his admirable summary of the achievements of cancer research (December 7th, p. 1116) Dr. W. E. Gye refers disparagingly to the work of those who studied cancer before experimental research started. But does he not go a little too far when he speaks of the " atmosphere of ignorance and pessimism " then in existence? Even if we make every allowance for Dr. Gye's position as an advocate, a leader in the defence of modern research, and also for the fact that his appeal was to the public as well as to the profession, the image he suggests of a sun rising out of an atmosphere of darkness and ignorance is hardly complimentary to the cancer workers of the last century.

As a fact, even as far back as the middle of that century, Walshe's book on *The Nature and Treatment of Cancer* proved that there already existed a considerable knowledge of the neoplasias. And it needs but a glance through the pages of books written by Senn (1900), Borst (1902), Hansemann (1902), Wolff (1907), Roger Williams (1908), dealing with work done by oncologists during the latter half of the nineteenth century, to acquit them of ignorance and pessimism. I have myself had no difficulty in jotting down the names of over fifty nineteenth century oncologists, all recognized as important contributors to the progress of cancer science, among them being those of Müller, Virchow, Recklinghausen, Marchand, Durante, Paget, Butlin, Reclus, Hansemann, Waldeyer, Hutchinson, Klebs. It is the fashion nowadays to debunk great men of the past and to laud those who live in present times, but what names are there among those engaged in modern experimental research to compare with these? Those of Yamagiwa, Itchikawa, Fibiger, stand out most conspicuously, but if we may judge from the number of times they are made to do duty as brilliant luminaries of research they are the only stars of their magnitude. So often are they mentioned that we are getting into the habit of thinking that it is to them that we owe the discovery that cancer can be caused by chemical stimuli. In truth it is to Rehn, Volkmann, Percivall Pott, Curling, Butlin, Hutchinson, and others of the nineteenth century that we are indebted for this discovery. The work of Hutchinson on the production of cancer by arsenic is by itself enough to prove beyond all reasonable doubt that cancer can be caused by chemical stimuli, as that of Goebel, published eight years before Fibiger's paper, proved that it can be caused by animal parasites.

The report of the director of the Imperial Cancer Research Fund conveys the impression that almost the whole of our advance in knowledge of cancer during this century is the result of the modern research movement, whereas facts seem to point to the conclusion that, however rich in promises experimental research may be, it is poor in performance.—I am, etc.,

Hastings Gilford.

Reading, Dec. 9th.

Medical Science and New Doctrines

Sir,—Your leader of October 26th on this year's Harveian Oration deserves some amplification, because there is now no reasonable doubt that medical science still has its bonds of age-long tradition. One of them is the presumption that the excitation of isolated muscle or nerve to activity by electricity is the same as natural stimulation. Opposed to this presumption are the facts that the stimulation of a beating heart to greater activity by salts, drugs, or hormones is a process which not only obeys its own proper laws but also is an entirely different process from that of exciting quiescent muscle or nerve, or even the Stannius heart, to any activity at all by electric currents. It is also the case that the stimulated heart has its own proper modes of behaviour to which there are no parallels in muscle or nerve excited to activity by electric currents. There is no doubt, however, that the stimulation of a heart by adrenaline is a natural stimulation ; there is also no doubt that the stimulation of retinal end-organs by light is natural stimulation. It is further the case that this stimulation of retinal end-organs follows the laws which govern the stimulation of rhythmically active organs, and that the stimulated end-organ behaves as does a stimulated rhythmical structure. The significance of the facts, however, can only be appreciated by those who know the laws which govern the stimulation of rhythmically active tissues and the behaviour appropriate to it—an important point, because these laws and behaviour are recent physiological discoveries awaiting more general assimilation.

After that due assimilation it can be recognized that much that now passes as sound science is really a series of adaptations to false primary propositions, and is on a par with what biology generally would be if the aim of biologists were still to produce hypotheses which attempted to weld their facts into accord with the Book of Genesis. Such being the case a reasonable subject of study for the Vision Committee of the Medical Research Council would be their primary proposition. Does a stimulated retinal end-organ behave like a stimulated rhythmical structure, or does it behave like isolated muscle or nerve excited to action by electric currents? A similar fitting study for neurologists would be to examine their primary proposition concerning central neurones. Do these behave as though they had inherent rhythmical activity, or do they behave, as has so far been presumed, as though they had inherent quiescence until excited to activity by some external agent?

These are fitting subjects of study because there is no compromise between a doctrine that living structures have an inherent rhythmical activity and the presumption so far current that they remain quiescent until excited to activity by a stimulus. If the former be true the latter is false, and with it all the philosophy or science which has been built on it. But although there is now evidence of fact for the former and none for the latter, that attitude to a new truth to which you draw attention would determine acquiescence in error rather than a

movement towards verification of the new. More particularly is this the case when, as in the present instance, one cannot even begin any consideration of the possible new truth without first doubting what one had previously imagined to be established science. Yet the ultimate doubt is small, only that of doubting that the exciting action of an electric current on an excised muscle in the abnormal state of quiescence is the same as natural stimulation. The established doubt would provide, however, the first advance to a new era in medicine.—I am, etc.,

W. BURRIDGE.

King George's Medical College, Lucknow, Nov. 22nd.

Congenital Pyloric Stenosis

SIR,—In their paper on congenital pyloric stenosis, published in the *Journal* of November 30th, Mr. W. A. Thompson and Dr. W. F. Gaisford raise many interesting points in this ever-interesting subject, and they reiterate the thesis that with early operation the mortality could be reduced to about 5 per cent. But the fact remains that some cases do not come under treatment early, not because someone has failed to make a diagnosis, but because the main symptom, vomiting, has been so variable in degree and in frequency that some time passes before it dawns on the mother herself that there is something seriously amiss with her baby. That is not the type that arrives at the hospital *in extremis*. In reviewing their cases Thompson and Gaisford state:

"Three slowly and steadily petered out . . . without showing any response to remedial measures. It was noticed that a few cases, apparently good operative risks, behaved in this manner; though now obtaining and retaining their feeds, they seemed totally incapable of absorbing them. Others, apparently bad operative risks, immediately and continuously improved from the time of their operation."

Experience similar to this is probably common to workers in all children's hospitals where the Rammstedt operation is part of the routine treatment. So far as my observations go these "apparently good operative risks" who do not survive are to be found among the older babies—those who come under treatment after the age of about 8 weeks, who have been vomiting for more than two weeks, but who are still reasonably healthy babies. Breast-feeding has been abandoned and various foods tried. They present to my mind a picture distinct from those younger babies in whom vomiting has been so severe that treatment is sought within ten days of the onset. My shortest history is one of vomiting for two days. The general condition of any of these babies may be such that they are considered "bad operative risks," but they do well. They are usually still breast-fed. There is, of course, a gradation between the two groups.

So far as the first group is concerned, the question of the wisdom of routine surgical intervention arises and seems to demand consideration. Even if the baby survives the risk of the operation, the post-operative feeding so often becomes a question of steering between starvation and death on the one hand and diarrhoea and death on the other—"they seem totally incapable of absorbing the food." Presumably, function has been impaired by disuse. By medical treatment alone a more gradual return of digestive and absorptive function is called for because of the more gradual relief of the obstruction, and to this more gradual demand the baby is able to respond.

The duration of the symptoms would appear to be the point of importance in deciding for or against operation. In any case, irrespective of severity, in which a definite diagnosis can be made within, say, twelve days of the onset of symptoms, there seems little doubt that the Rammstedt operation should be part of the routine, and should be carried out as soon as is possible. The majority of cases come into this group. But in those in which the symptoms are of longer duration it is possible that operation is contraindicated. In this belief I have treated four such cases without operation, and the results have fully justified this course. It seems probable that a careful selection of so-called late cases for treatment without operation could help to reduce a mortality which is still too high in this country.—I am, etc.,

FRANCES BRAID, M.D., M.R.C.P.

Children's Hospital, Birmingham, Dec. 2nd.

Inexpert Radiography

SIR,—I think all are agreed that the patient deserves, and should have, the best that radiology can offer, and inexpert radiology cannot come into this category. But one might reasonably ask whether the methods at present adopted in educating and training the future experts are the best that can be devised? Not being a practising radiologist, but having recently had some experience of the road to be travelled in acquiring one of the recognized diplomas in the science, I unhesitatingly say that better methods could be evolved. Candidates at present spend five months relearning physics, much of which has already been consigned to the dust-bin of forgotten knowledge, nine-tenths of which will not be of the least use to them afterwards, and then they devote three months to the practical side of their future life work. Surely it would be much better to reverse this order of things, and give them the minimum of physics and the maximum of time in learning the real work that will engage them afterwards, such as screening and the interpretation of radiographs under the supervision of skilled radiologists of experience. If the newly formed British Association of Radiologists would interest itself along these lines it would perhaps justify its birth; if not, it had better not have been born. Further, would it not be possible for a general practitioner, on referring a case to hospital, to have a report direct from the radiologist rather than have a second-hand and garbled report from the surgeon or physician, or, as happens in many cases, none at all?—I am, etc.,

R. J. MAYBERRY.

Roehampton, Dec. 9th.

SIR,—It would appear from Colonel R. H. Elliot's letter in your issue of November 30th that he believes himself able to determine not only the presence of a septic focus in connexion with a tooth, but the measure of the sepsis, merely from an examination of an *x*-ray photograph, and this without any assistance from the dental surgeon.

Investigators on both sides of the Atlantic are agreed that the *x*-ray photograph is valuable only for its positive indications, and that serious infection may exist without any evidence of it in the skiagram, as is often proved by a culture from the tooth after extraction, or from a previously sterile burr inserted into the bone in the suspected region. The history, too, is often of extreme value. Therefore to make a diagnosis on *x*-ray photographs alone, even when taken by the best radiologist, without a clinical examination, "is unfair alike to the surgeon and the patient." "This amateur business ought to be put a stop to."

Colonel Elliot seems to have been unfortunate in his dental radiographs. As a matter of fact many dental surgeons have a much wider experience of dental radiography than the average radiologist, from whom bad dental films are not unknown.—I am, etc.,

J. H. BADCOCK.

London, W.1, Dec. 3rd.

SIR,—The advances in radiology have been so rapid and far-reaching that the profession in general cannot be expected to understand the subject fully. Doctors are still inclined to regard the radiologist as a photographer who merely supplies them with films as required. They overlook the fact that the radiologist is a consultant who takes films to enable him to give his opinion, and that these films are legally his own personal property, just the same as a microscopical slide belongs to a pathologist. The lack of co-operation between the profession and the radiologist is due to three causes:

First, the manufacturers who canvass doctors and persuade them to purchase *x*-ray plants, which they are assured require no special training to handle and are "very remunerative investments." The question of interpretation is usually ignored.

Secondly, the tendency of the profession to employ lay radiographers in preference to their professional colleagues. Lay radiographers cannot, of course, give reports, but they can supply films at short notice and at cheaper rates than medical radiologists, and can and do advertise the fact by circulars and in the medical journals.

Thirdly, large numbers of doctors consider they are quite capable of interpreting films for themselves, and I have on many occasions been asked to "Just send the films along, don't trouble to report on them," but I have made it a rule to always enclose my report.

It is easy to be a "Jack of all trades," but difficult to be a master of one, and this applies to the interpretation of films, which is fraught with difficulty and cannot be learnt by reading books or attending a short course of instruction, but requires years of experience and the study of thousands of films. Even then cases arise which sorely puzzle the most experienced radiologist. After more than twenty years' experience I am convinced that, if our colleagues fully realized the difficulties and the dangers of interpretation and technique, they would rely on, and co-operate much more closely with, the radiologist, and I feel that due consideration of the points now being ventilated in your columns will go a long way towards removing existing abuses and reaching a satisfactory conclusion.—I am, etc.,

Bath, Dec. 4th. G. E. PEPPER.

SIR,—The letter by "Radiologist" in your issue of November 23rd is worthy of more than passing notice by all members of the profession, as it primarily raises the question of the status of radiology in this country as compared with other countries, including certain of the British Dominions.

In my experience a large majority of the profession appear to consider that in radiology all that is required is a "photograph," and, so long as they are supplied with this, interpretation is a very simple matter. All types of apparatus are now placed on the market, and from some of the advertisements that appear in the medical journals one would conclude that all that is necessary is to "press the button" and the set does the rest. The "photograph" is produced, and that's all there is to it. Within limits such a simple procedure might be practised in straightforward fracture cases, but in other examinations no one who is not experienced and fully qualified should, in my opinion, be permitted to carry out a radiological investigation.

I have, over a period of many years, had numerous cases referred to me which had previously been "photographed" by members of the medical profession owning an *x*-ray set, at cottage hospitals, etc. I enumerate but a few of these.

1. A case of suspected renal calculus in a stoutish patient examined by means of a portable set. Result, negative. Three weeks later examined by a radiologist with a powerful set. Result, large calculus in right kidney, confirmed by operation.

2. Opaque-meal examination of stomach by a lay worker. Result, negative. A fortnight later a screen examination by a radiologist revealed a large ulcer in the lesser curvature. Confirmed at operation.

3. A case of pain in the right tibia with a history of recent injury. Examined at a cottage hospital. Diagnosis: osteomyelitis. A week later examined by a radiologist, who diagnosed sarcoma, which was confirmed post mortem.

I have personally had cases referred to me which actually had an opaque-meal examination carried out in the patient's own home, a standard type portable set being employed. No unregistered dentist is permitted by law to practise dentistry. The passing of this law was to protect the public from treatment by an unqualified person, and I often wonder why, in these days, where an early diagnosis is of such paramount importance in gastric and other cases, a radiological investigation can be carried out by anyone in possession of an *x*-ray set.—I am, etc.,

December 2nd. D.M.R. AND E.CAMB.

SIR,—I think most of us could quote similar cases to those described by your correspondent "Radiologist." His letter, however, opens up a wider field for discussion: it is quite evident that all is not well with radiological practice in this country, and it is a fact that of all classes of specialists the radiologist stands out alone as being the most dissatisfied with existing conditions in his particular branch of medicine. A few reasons will explain why this is the case.

Radiologists as a whole are not regarded or treated as consultants, but rather as interpreting radiographers—witness the manner in which requisition forms are usually filled in. The space for "information required" is usually occupied by a description of the *x*-ray examination required, such as "B.E." or "I.V.P.," whereas the radiologist wants to know what it is which the clinician wishes to find out by means of an *x*-ray investigation. The clinician should give a lead by making a provisional diagnosis when possible, so that the radiologist can pay particular attention to the form of examination which will help to exclude this. Besides this, however, he should make it clear that there is a particular symptom, or group of symptoms, such as "haematemesis, loss of weight, etc.," the cause of which he wants to elucidate. In this way much inconvenience to the patient, much expense, and much time would be saved. There is far too much haphazard requisitioning for "pictures" and far too little clinical information is given to the radiologist; on the other hand, there is not nearly enough supervising of radiography by the radiologist himself. The radiologist's report quite commonly is not read, but the films instead are examined by the clinician and often misinterpreted.

There are, of course, exceptions to this method of approach to the *x*-ray department, notably in the case of injuries and fractures, but here again far too much time is wasted by radiologists in hospital departments in writing detailed reports upon perfectly obvious fractures before and after treatment. Most of this time could be better occupied in studying the clinical aspects of other types of cases from the point of view of being best able to obtain helpful information by means of his own specialty, and personally carrying out examinations which are too often left entirely to the radiographers.

The other matter which is seriously handicapping the specialty of radiology is the ever-increasing way in which private practice is being cut into every year. Among these may be mentioned:

1. Hospital abuse, which is rampant; radiologists are being exploited by hospitals and, unfortunately, also by their own

colleagues. Hospital casualty departments are full of minor accident cases that should be *x*-rayed, if need be, in private.

2. Many private practitioners are doing much of their own work with toy machines. The solution for the difficulties of small towns in this respect is not for practitioners to do their own work, but for radiologists in neighbouring large towns to visit the hospitals in these small towns, and to see both hospital and private patients there on a payment basis.

3. Many dentists use their own plants to do work outside their proper sphere.

4. Public medical officers—for example, tuberculosis officers—do *x*-ray examinations on private patients.

5. Unqualified radiographers, whose services are often sought directly by practitioners. The rules of the Society of Radiographers to the effect that members are not allowed to report on radiographs carries no force, since these reports are more often than not given verbally. I could quote instances where this has led to serious results both for the patient and for the doctor. And now we have the various classes of bone-setters using *x*-ray plants!

The most serious trouble, however, is hospital abuse. For various reasons patients unwilling to pay, or considered not capable of paying, full private fees are often sent up to hospital departments for an *x*-ray examination. Usually the almoner is powerless to deal with these patients, because their story has to be accepted and they appear to be more or less borderline cases. Quite often they have already paid a private fee to a consultant, who passes them on to the hospital department for *x*-ray investigation. Radiologists are not usually given the opportunity of seeing these cases privately for a modified fee, but are compelled to see them as free hospital patients.

The result of all this is that the radiologist is being deprived more and more each year of the small bread-and-butter work which should be the solid foundation of his practice. He has rather to rely upon the more complicated types of examinations, which are fewer and are expensive to carry out. The result is a small turnover, with consequently high overhead charges, all because the smaller, easier, and less expensive types of examinations are being taken from him. From the profession's standpoint this ultimately acts contrary to their own and the patient's interest, because the radiologist has not a sufficient balance of funds to keep his plant up to date and to introduce improvements. Efficient private radiological practice is being slowly stifled, and it is up to the medical profession in their own interests to see that this state of affairs is put an end to.—I am, etc.

Sussex, Dec. 4th. SYMPATHIZER.

Asymmetrical Limb Development

SIR,—In the issue of the *Journal* of November 29th Dr. Matthew Bowman describes a most interesting case of asymmetrical limb development in a girl 14 years old. The following case shows a marked similarity.

The patient, a girl aged 11 years, attended Dr. W. S. C. Copeman's out-patient clinic at West London Hospital, complaining of "shortness of one leg," which was discovered in the routine examination at her school. It was found that the shorter leg appeared to be normal in every respect. There was no loss of reflexes or of sensation, the power of the muscles was good, and there was no apparent wasting of any muscle groups. The right leg was two and a quarter inches longer than the left. Most of this increase (one and three-quarter inches) was in the lower leg, and only half an inch in the thigh. In this case the circumference of the thigh of the long leg was half an inch greater than that of the short one. The longer leg was covered with large patches of what appeared to be a naevoid condition, both in the thigh and in the lower leg. There was an accompanying scoliosis. The *x*-ray films of the bones and joints appeared to be normal.

Naevoid conditions of a limb are a recognized cause of elephantiasis, and as this condition was present we attributed the increased growth to this cause. The naevoid condition may involve the deeper structures as well as the superficial, thus giving a larger blood volume to this limb, and we considered that this increased blood flow enhanced the nutrition and development, especially at a time of physiological rapid growth.

Assuming that the excessive growth was due to an increased blood flow, we felt that any effort to increase the circulation in the short leg before the period of growth was over might result in stimulating growth in that leg. We therefore suggested a sympathectomy on the vessels supplying the shorter leg. Due to a certain reluctance on the part of the patient and parents to accept any treatment, we have been unable to have this done as yet. Continued physiotherapeutic measures might also be tried to gain this end. Although by any such methods one cannot hope to gain a very great increase in growth, even half to three-quarters of an inch during her remaining six or seven "growth" years would be a decided help, and we feel that it is worth the trial.—We are, etc.,

C. T. POTTER.
December 4th. JOAN URWICK.

How Surgical Maggots Act

SIR,—In the interesting editorial annotation (*British Medical Journal*, December 7th, p. 1108) under the above heading, in regard to the probable bactericidal action of maggot excrement, I was rather astonished to read that the idea of using excrement as an antiseptic is novel. In some parts of the Continent till quite modern times the local application of fresh warm human urine was a popular remedy for abrasions, slight wounds, and chilblains. When a boy cut himself slightly he would pass urine on to the wound or get another boy to do so, and the same custom existed amongst mechanics as a first treatment for occupational abrasions or cuts. In truth, urine was used much as aseptic (if not antiseptic) hypertonic saline solutions (partly for their osmotic effect) have been in recent times employed for wounds. I have heard that after the horrible judicial floggings of old times urine was applied to the injured parts to prevent the supervention of gangrene, but I have been unable to verify this. I remember, however, as a small child hearing that after the administration of the "cat-o'-nine-tails" for garrotting or robbery with violence, a sheet dipped in salt water was placed on the terribly wounded back (at the time, of course, I thought that this must be to increase the punishment!). "Pernionin" ointment (Heinz) contains urea and oleum salviae from the idea of old popular applications for chilblains. The bygone treatment by the internal drinking of urine was of a totally different nature; it was similar to the employment nowadays of urea as a diuretic.—I am, etc.,

London, W., Dec. 7th. F. PARKES WEBER.

Migraine

SIR,—The statement by Dr. Douthwaite that, Dr. Critchley having found the pressure of the cerebro-spinal fluid to be low in migraine, there ought to be no increase of intracranial pressure, cannot be accepted as conclusive. Sir Leonard Hill[1] has affirmed that "the cerebro-spinal fluid does not by any means always correspond with the intracranial pressure. For the brain can expand to a far greater degree than the spinal cord, and the brain on expansion, after expressing the small quantity of cerebro-

[1] *System of Medicine*. By Allbutt and Rolleston. 1910, vol. viii, p. 14.

spinal fluid from the cranium, comes into contact with the cranial wall. On the other hand, the cerebro-spinal fluid not only distends the vertebral ligaments, but leaks away from the subarachnoid space."

Again, Dr. Földes has mentioned that there are two types of liquid retention in the brain, one the "retentional" type, the brain taking part in the retention of liquid in the organism, and the other, the "mobilization" type, in which liquid retained throughout the body becomes shifted to the brain, causing distension of the meninges. We do not know which of these retention types is present (should these types exist), but no doubt they might create a difference in the pressures. But the observation of Hill seems to imply that pressure in the cerebro-spinal fluid is independent of either.—I am, etc.,

London, W.1, Dec. 7th. A. G. Auld.

Unilateral Breast-feeding

Sir,—I was interested to read Dr. Alan Moncrieff's note on "Successful Breast-feeding from one Breast Only," which appeared in your issue of August 17th. It is the custom in a local "chefferie" for the recently delivered woman to drink no water for the first three days and, when lactation begins, to have the milk tested from each breast separately by the local witch-doctor. This he does by heating the milk in a crude native crucible, and if it turns black (chars) too quickly it is deemed unsuitable for the infant! So it is comparatively common to see a woman with one huge breast from which she feeds her infant and the other apparently atrophied. However, massage and the stimulus of the suckling child will frequently bring about lactation in the "bad" breast. This is fairly strong evidence of the part played by local stimulation and efficient emptying of the breast. As we rarely see a case of underfeeding directly attributable to this custom, it is further evidence of the amazing adaptability of the human organism to the conditions we impose upon it.—I am, etc.,

E. R. Wide, M.B.

Congo Balolo Mission, Baringa, Basankusu, Haut Congo Belge, Oct. 24th.

The Quality of Sunlight

Sir,—Loss of skin pigment to the extent of positive bleaching in Europeans in extreme summer temperatures with low humidity is recorded by Kennedy of the Physiology Department, Royal College of Medicine, Baghdad (November 9th).

Two aspects of the problem present themselves: (1) the purely physical and spectrographic measurement of the relative distribution in the solar spectrum of its energy content; and (2) the physiological effects under given conditions. The former is ascertainable. It requires spectrographic data and analysis at varying parts of the earth's surface. The latter is excessively complicated, involving a wide knowledge of general biology and the isolation and measurement of the most intimately interdependent biophysical and biochemical processes.

The fullest information on this available at present is contained in Monograph No. 62 of the Research Series of the American Chemical Society: *Physiological Effects of Radiant Energy* (Laurens, 1931). It contains some 900 references to original articles.

"The entire problem of pigment formation is extremely difficult and complicated, being morphological as well as chemical" (p. 132). "The fundamental principles of the biophysics and physiology of radiation are still unsolved, and the real action of radiation on the living cell is still unknown" (p. 568).

These may be taken as correct statements. However, we can make an approach on two conditions: the use of clearly defined and understood terms, and correlated consideration of the effects of ultra-violet and *x*-ray experimental work on both plant and animal tissues. "Radio-physiology" appears to me to be a suitable and neat term to employ. There exists now a very large body of knowledge available from experimental studies of *x* rays and radium. Laurens, while including several artificial sources of ultra-violet light, omits *x* rays and radium, yet includes in the title of his book the term "radiant energy." Conversely, Colwell, in an important work just published—*The Method of Action of X-Rays and Radium on Living Tissues*—uses the term "radiation" exclusively, without a single mention of Laurens's "radiant energy." This practice does not assist clarity or the solution of related problems.

Souttar (*Radium*, 1934) says: "Most of the photo-chemical phenomena produced by gamma rays are equally producible by ultra-violet and *x* rays. Among these are the decomposition of H_2O, formation of H_2O_2, O_3, etc., and flocculation of colloids. . . . So identical are the phenomena that it appears probable that the primary action of gamma rays is to produce ultra-violet rays, which in turn produce photochemical action. Chemical action is essentially a property of the outer electronic levels."

This, of course, does not answer the problem of how ultra-violet rays affect the cell, but is introduced to show clearly that it is a serious defect that these bodies of knowledge are alienated from one another in watertight compartments. Further, Laurens's title is inaccurate in that he takes no account of the physiological effects of radiant energy on the plant kingdom. In Laurens's chapter "Effects on the Skin" no consideration is given to a factor which lay, clinical, experimental, and *x*-ray experience stresses—namely, the H_2O content of the skin or in the intervening atmosphere.

Without the physicist *x*-ray and radium work would be compassless at sea. The adoption of atomic physics by medicine is due, and particularly urgent in tropical medicine. Its principles have proved abundantly fruitful. They are the fundamental facts for future constructive principles and advance.—I am, etc.,

London, W.6, Nov. 25th. W. M. Hewetson, M.B., Ch.B., D.P.H., D.M.R.

Tuberculosis Among Students and Nurses

Sir,—I read with much interest the letter on this subject by "An Old Resident" in the *British Medical Journal* of November 30th. Surely if the British Medical Association has as one of its principal objects "the maintenance of the interests of the medical profession," then a case such as that mentioned by "An Old Resident" of the occurrence of six cases of active tuberculosis among twenty-six residents demands immediate investigation by the Association. I would suggest that a committee of inquiry be set up to formulate regulations controlling all resident posts as to hours of duty, remuneration, and general conditions of service, with a view to the amelioration of the existing conditions throughout the country.—I am, etc.,

December 3rd. A Young Resident.

Sir,—"Another Old Resident" (*Journal*, December 7th, p. 1130) has called attention to the abuses of the residents in hospitals, which he rightly supposes to be at the root of their frequent ill-health. The conditions under which residents work in the great majority of hospitals are nothing short of appalling. Those in authority evidently believe that the experience gained in hospital appointments is sufficient to excuse all injustice. True, the experience is invaluable, and the expert control of the honorary staff protects the newly qualified practitioner while growing out of his rawness from mistakes which, if made in private, would be disastrous for him. But the residents are equally valuable to the hospital. The reputation of a hospital may primarily depend on the

lustre of its honorary staff, but it is the continuous and sustained efforts of the residents which maintain its unfailing efficiency. It is their work, before and after the honorary's visit, which enables those few hours to be of maximum value. Were it not for their reliability—and how rarely is confidence misplaced—hospital organization would be reduced to a chaos in which even the most brilliant of honoraries would find their visits so much wasted time. The honoraries themselves realize this—witness their personal interest in the selection of housemen and the increasingly high qualifications demanded. Is it not time that hospital governors realized it too? The bad food, the dilapidated quarters, the lack of freedom, the overwork, the miserable pay, all recall the tyrannous apprenticeships Dickens exposed, a terrible anachronism in these times. For six months I was resident in a hospital where even the sanitary arrangements were abominable.

I differ from "Another Old Resident" on one point only. I cannot lay claim with him to the phrase "without complaint." The bitterest lesson I have learnt is the futility of complaint.—I am, etc.,

December 7th. NEWLY QUALIFIED.

SIR,—Your correspondent Dr. Kayne (December 7th) emphasizes "the need for ventilating this important subject." Surely what requires ventilating are the hospitals themselves, and more particularly the quarters of the resident medical officers. As a profession we preach fresh air and practise frowst.—I am, etc.,

December 9th. OLD RESIDENT NO. 3.

Voluntary Euthanasia

SIR,—After reading your leading article on the above subject it occurred to me that my own experience as physician to the Royal Edinburgh Hospital for Incurables might prove of interest to your readers. While it may be true that our cancer cases often present a picture of pain bravely borne, there are many of our 200 patients whose lives are by no means dull, valueless, or so miserable that they would welcome release. Were it possible to conduct the upholders of the Bill round the Liberton Cottage Hospital, which houses some sixty of our patients—none of whom are cancer cases—I am convinced their ideas would change. They would be greeted by smiling, happy faces, and no complaint would be heard from the visit to the first to the very last. Life for each and all is no burden. The same thing would be noted if the Longmore—our main hospital—was visited, and even in the cancer wards I never hear a complaint.

It is hardly necessary for me to refer to what I always taught my students when I had wards in the Royal Infirmary, but in brief it was that pain can and should be soothed by one or other of the numerous drugs we now possess. I remember many years ago being informed by a well-known Edinburgh lady, now deceased, that there should be no incurable hospitals at all, as all "incurables" should be given a big lethal dose. The conversation was the sequel to a legal case in Edinburgh at the time when a medical man stated that he had given a lethal dose because the patient he killed was a cancer case and suffered so much. The doctor escaped with his life, but had to abandon practice and leave the city.

Not long after the above incident I had a very uncomfortable experience when a doctor who had been one of my old students and who was in practice in England came north to see me and to ask for advice. He had given a big hypodermic dose of morphia to his mother-in-law, who was suffering from excruciating neuralgia, with fatal results. He declared he was devoted to the patient and could not bear to see her suffer. He realized the dose was a heroic one, but the fatal result was a dreadful shock to him.

There is one very big question involved, and that is the sympathy, care, and attention which is produced and developed in those who minister to the suffering, and were voluntary euthanasia permitted it would or might be the cause of an easy escape from much necessary responsibility. My experience at present includes the inhabitants of the criminal lunatic and criminal defective departments of Perth Prison. If I were asked for how many of these I would propose euthanasia, which would certainly not be "voluntary," I should find it difficult to find a single case. Some of the lunatics and some of the defectives may be—if ever released—a very real danger to the public, but none of these inmates would come within the terms of the proposed Bill. One gets fond even of them, and there is always the hope, however faint, of some improvement. Then in the case of imbeciles who can never recover normality I question if the superintendents of the institutions which house them would subscribe to such a means of disposal as the Bill indicates were it applicable.

It is perhaps worth mentioning that the personal means of escape from pain and suffering, whether of mind or of body, by attempted suicide is punishable in England, although not in Scotland.—I am, etc.,

Edinburgh, Dec. 2nd. ROBERT A. FLEMING.

SIR,—May I be allowed to make it quite clear that although the Voluntary Euthanasia Legalization Society held its inaugural public meeting on Tuesday evening in B.M.A. House, the British Medical Association, as the representative body of the medical profession, has not in any way committed itself as being in favour of or against our proposals. As a matter of fact, the question of the legalization of voluntary euthanasia has never been considered by the Association or the Council. At the same time, the question is one not only of great public interest, but of very special interest to the medical profession; and it was for this reason that our society thought that B.M.A. House would be a very suitable venue for our first public meeting. May I add that, personally, I do not think it is desirable that the medical profession, as a profession, should take any sides on this question, which is not a medical one, though it has very important medical bearings.—I am, etc.,

C. KILLICK MILLARD,
December 11th. Honorary Secretary, Voluntary Euthanasia Legalization Society.

*** A report of the meeting held in London on December 10th to discuss voluntary euthanasia will be found at page 1168.—ED., *B.M.J.*

The British Institute of Philosophy

SIR,—You were kind enough four years ago to publish a letter appealing for support of the British Institute of Philosophy, which was founded in 1925 with the late Lord Balfour as its first president. The appeal was based on the existing disorganization of beliefs in fundamental principles in every department of life, and the need of a cultivation of systematic thought that has the most intimate bearing on practice. Since then this need has not diminished. We have seen in the interval the rise of forms of political life which appear to deny those con-

structive forces which have been generally regarded as of first importance. On this and on other accounts there is pressing need to consider what the primary standards of right and wrong in the conduct of nations should be.

We therefore, in the tenth year of the Institute, venture to ask again for your hospitality with a view to making its work better known and obtaining further support that will enable it to extend its activities. These consist at present of the publication of the quarterly review, *Philosophy*, the holding of courses of public lectures, the organization in London and other cities of reading circles, and the arrangement of monthly evening addresses by leaders of opinion in various departments of thought—scientific, aesthetic, political, moral, and religious. Those of your readers who would desire to become members of the Institute (the quarterly subscription is £1 1s., which covers the price of the quarterly review) or to obtain further information with regard to it are invited to communicate with the Director of Studies at the rooms of the Institute in University Hall, 14, Gordon Square, W.C.1.—We are, etc.,

S. Alexander. Oliver Lodge.
Arthur Eddington. J. H. Muirhead.
William Ebor. Russell.
W. R. Inge. Rutherford.
A. D. Lindsay. Herbert Samuel.

London, Dec. 3rd.

The Food Value of Alcohol

Sir,—On page 1124 of your issue of December 7th it is reported that Dr. C. S. Thompson, M.O.H., Belfast, addressing the Irish Temperance Alliance, said that alcohol "was not a true food since it could not be utilized for repair purposes." On the opposite page Sir Edmund Spriggs, at the Medical Section of the Royal Society of Medicine, is reported as saying: "Beer, spirits, and wine had a considerable food value, which must be allowed for if they were taken. A glass of beer was equivalent to a round of white bread, as was half a bottle of white wine; and two ounces of whisky was equivalent to two-thirds of a round of bread."

The juxtaposition of these statements in the *Journal* seems unfortunate. It is not for me to attempt to reconcile them. Possibly the matter might be referred to the Nutrition Committee. Our modern democratic methods appear to assume that all doubts and difficulties can be resolved by the voice of a committee.—I am, etc.,

Coventry, Dec. 10th. E. H. Snell.

Birth Control in Modern Life

Sir,—It is not possible to compare chalk with cheese, nor a bride inserting her first pessary with a woman suckling her tenth child. Dr. Kathleen E. Murphy should compare the aforementioned bride with the mother of three or four children inserting a stick of slippery elm or a crochet hook into her cervical canal, after having missed a period. Do not the opponents of scientific birth control know that abortion is rampant among the working classes? As a medical woman of some experience I think I am right in saying that the prevalent response to a pregnancy, after the desired number of children have arrived in the family, is attempted abortion.

No method exists for assessing the damage done to the foetus by attempted but unsuccessful abortion, and all authorities admit abortion as a contributory factor in the continued high maternal mortality. Abortion would be reduced to vanishing-point if scientific birth control advice were available for the poor, so that they, like others, might limit the size of their family according to their means and desires.

Why should we, in matters of sex arrangements, give Nature an entirely free hand, while in all other departments of life we bend her to our requirements? Everyone who advocates "self-control" knows very well that it is both impracticable and destructive of family harmony, unless coitus interruptus is included in self-control, and this is admittedly a frustration of nature, except, perhaps, in the case of married ascetics, who are rare phenomena.

The population may decline, but who is to say that a small population of healthy "well-bred" citizens is not preferable to the indiscrimately bred masses of the present time?—I am, etc.,

December 9th. M.B., D.P.H.

Obituary

R. H. MILLS-ROBERTS, C.M.G., F.R.C.S.Ed.

Lieut.-Colonel R.A.M.C.(T.)

A well-known figure passes from the medical and public life of North Wales by the death of Dr. Robert Herbert Mills-Roberts, which occurred at Bournemouth, in his seventy-fourth year, on November 27th after a long illness.

Dr. Mills-Roberts was born at Festiniog in 1862, the eldest son of Robert Roberts, J.P., of Plas Meini, formerly manager of the Oakeley quarries. His early education was obtained at Friars School, Bangor, and Aberystwyth College, from where he proceeded to St. Thomas's Hospital and took the diplomas of M.R.C.S., L.R.C.P. in 1887, and afterwards the F.R.C.S.Ed. in 1893. After serving as house-surgeon to the Stroud Hospital and Birmingham General Hospital he practised at Llanberis, where he was also surgeon to the Dinorwic quarries from 1889 to 1914, when he left for active service.

During the period of his practice at Llanberis he became recognized as a very capable surgeon, and did most of his own major surgery at the Dinorwic Quarry Hospital. He acquired there also much proficiency in head surgery, and in his address as president of the North Wales Branch of the British Medical Association in 1926 he took this as the theme of his discourse, and quoted and demonstrated a large number of cases. His main interest was always surgery, and on it he wrote many articles to the medical journals from time to time. He was associated with the Territorial Army movement from its inception, and held the Officers' Decoration. During the South African War he was a surgeon on the staff of the Welch Hospital, with the rank of major, R.A.M.C., and for his services was created a C.M.G., mentioned in dispatches, and received the two medals with three clasps. At the outbreak of the great war he was second in command of the 6th Battalion of the Royal Welch Fusiliers, but he was transferred to the R.A.M.C., and as lieutenant-colonel commanded the 131st Field Ambulance from 1915 to 1918 and the 41st Stationary Hospital from 1918 to 1919; for his services in France he was again mentioned in dispatches. After his demobilization he was appointed Deputy Commissioner of Medical Services under the Ministry of Pensions, and served in this capacity in North Wales and Shropshire from 1919 to 1924.

During his student days and early qualified career his attainments on the Association football field were momentous. His hobbies were all outdoor, and up to quite recent years he was an unusually fine shot. A good judge of a horse, he rode frequently, and when driving often used a tandem in the days before motor cars.

His manner (writes a colleague) was quiet and unassuming, and his retiring nature seldom brought him to the limelight, yet for all that he had a sterling aptitude for making fast friends, and of this generation many still live

to mourn the loss of that friendship. To him duty was a sacred trust, and never did the dictates of his conscience fail to reveal it to him. He was a bachelor, and is survived by his only sister. His remains were cremated on November 29th, before removal to his home at Plas Meini.

Dr. JOHN ROBERT WILLIAMS, a former president of the North Wales Branch, writes from Penmaenmawr:

The death of Dr. R. H. Mills-Roberts removes a prominent surgeon from the ranks of Welsh specialists. Colonel Mills, as he was affectionately called, was of a retiring disposition, a charming personality, and very popular throughout the neighbourhood; particularly so was he with his comrades in the Army. During his younger days he became famous in the football world as one of the greatest goalkeepers. He played as an amateur for the Preston North End club during the most successful years in the history of that club, when they played throughout the season 1888–9 in the English League without being defeated. In the same season they won the English Cup without losing a goal, a feat never since accomplished, and said to be attributed mainly to Mills-Roberts's remarkable skill. He is mourned by a widowed sister, with whom much sympathy is felt; his only two brothers, who were in the medical profession, having died some years ago. Sympathetic references were made at magisterial courts on having lost a valued colleague.

A memorial service was held at St. Michael's Church, Festiniog, on December 8th, when a large number of the profession attended.

GRIFFITH EVANS, M.D., C.M., D.Sc.

We regret to record the death at Bangor on December 7th of Dr. Griffith Evans, a pioneer in the pathology of veterinary medicine and surgery, who celebrated the centenary of his birth last August.

Born in Towyn, Merionethshire, and descended from one of the five royal tribes of Wales, Griffith Evans was educated at first privately. He then entered the Royal Veterinary College, London, where he later won the Steel medal, and qualified M.R.C.V.S. in 1855. In 1860 he was gazetted to the Army Veterinary Department. When the American Civil War broke out he was attached to the Royal Artillery depot at Montreal. He was very anxious to visit the field hospitals of the Northern Army, and received leave after a personal interview with Abraham Lincoln, who insisted that this would be conditional on Evans making himself medically useful to the troops. During his spare time he had been studying medicine at McGill University, where he formed his lifelong friendship with Professor Osler. He graduated M.D., C.M. in 1865, presenting a thesis on tuberculosis in which he described the infectious nature of the disease, and advocated open-air treatment for it not far short of twenty years before Koch discovered the tubercle bacillus. Always of an independent turn of mind, he was supporting about that time Spooner's view that tetanus was also a specific infection resulting from a pathogenic organism, and advocating treatment which only won general approval long afterwards.

He returned to England in 1870, and ten years later he was asked by the Government of India to investigate a disease called "surra," which was destroying horses, mules, and camels. He reported that it was caused by a member of the already known protozoan group which had previously been considered to be harmless. Griffith Evans was, in the words of Osler, "the man who first saw a pathogenic trypanosome." Confirmation followed after much dispute, and in 1885 the name of *Haematomonas evansi* was conferred upon the parasite he had identified; it was later changed to *Trypanosoma evansi*. He had observed that this trypanosome occurred in the blood, and was transferable to other hosts by subcutaneous injection and by passing into the stomach; he had also noticed that it caused an increase in the white cells. This discovery opened the way to the great field of protozoan pathology, and the recognition of other forms of trypanosomiasis, notably that associated with the tsetse fly. He later identified the larval and adult forms of an organism in the blood of camels, and it was eventually named *Filaria sanguinea evansi*.

In 1890 Griffith Evans retired from the Army with the rank of colonel, and went to live at Bangor. In retirement the greatness of his work received repeated acknowledgement, France being the first country to do so officially. In 1917 he was awarded the Mary Kingsley medal for devotion to science by the Liverpool School of Tropical Medicine, and two years later the degree of D.Sc. was conferred upon him by the University of Wales. The freedom of the city of Bangor was awarded to him in 1931, when he was in his ninety-sixth year. In 1932, at a dinner in London of the Hunterian Society to commemorate the 204th anniversary of the birth of John Hunter, he was presented with the first Hunterian medal that had been struck in gold. When he reached his hundredth birthday last August the Royal Family joined with distinguished men in many countries to pay tribute to his great contributions to science and the welfare of humanity.

Griffith Evans had been a member of the British Medical Association since 1874. In 1870 he married Catherine Mary Jones, and had one son and four daughters, one of whom is Dr. Erie Evans of Bangor, formerly medical officer in charge of the Ministry of Health Women's Clinic at the Cardiff Royal Infirmary.

THE LATE DR. J. MACDONALD BROWN

Dr. E. HAY (London, E.) writes:

In your obituary notice of Dr. John Macdonald Brown no reference is made to his remarkable gifts as a teacher, and yet it was this quality which made him famous among students of the Edinburgh School of Medicine in the 'eighties and 'nineties. Many distinguished men were associated with that school then, but few could compete with Macdonald Brown, with his extraordinary ability in imparting knowledge to others. Armed with a few coloured chalks and a blackboard, he expounded the intricate subject of human anatomy with clearness and precision. He confined himself to the main essentials, and developed a method which, for examination purposes, had no rival. Although his incisive style and powerful voice were often reminiscent of the drill sergeant, he always held the attention of his students, and made the task of preparing for the professional examination an easy one. Dull indeed was the student who could not pass his anatomy examination after so thorough a training.

The death occurred on November 12th of Dr. KATHERINE OCTAVIA ROBERTSON of Limavady, Co. Derry, while exercising her horse, and a large area of the country mourns the loss under such tragic circumstances. Dr. Robertson graduated M.B., Ch.B., and B.Sc. at the University of Glasgow in 1919 and held the appointment of resident assistant surgeon to the Royal Hospital for Sick Children, Glasgow, and subsequently an obstetric appointment at the Royal Free Hospital, London. She proceeded to the degree of M.D.Glas. in 1924 with a commendation. She

had returned to her native town of Limavady, in which she settled in practice, and was appointed as medical officer to the Union and District Hospital. In this she found a field for her enthusiasm and energy, and was responsible for transforming what had been an ill-equipped and antiquated institution into a modern and up-to-date hospital. Dr. Katherine Robertson was a regular attender at B.M.A. meetings, and also showed a lively interest in her work. Those who knew her well record that she was a successful physician and a skilful operating surgeon, who will be much missed by her numerous patients, by whom she was generally loved. There is no doubt that an unfortunate accident has robbed the district of a useful member of the medical profession, who had apparently a long period of successful service before her.

We regret to report the death, on November 30th at the age of 78, of Dr. Edward Roberts, who was for many years surgeon to the Manchester Royal Eye Hospital. He received his medical education at Guy's Hospital, and obtained the diplomas M.R.C.S. and L.S.A. in 1883. His early appointments included those of resident obstetrician at Guy's Hospital, and ophthalmic surgeon to Chorlton Hospital. The greater part of his long professional life was devoted to diseases of the eye, and he won esteem for his knowledge and skill in a branch of surgery in which such strides were made during his lifetime. To these advances he made important contributions, and was the author of numerous articles in the medical press. His services to the Royal Eye Hospital at Manchester were recognized by his appointment as consulting surgeon when he retired. His later years were spent in Aberllowyn, near Aberystwyth, where he devoted himself to the welfare of the Aberystwyth Infirmary and Cardiganshire General Hospital, of which institution he was president at the time of his death. He had been a member of the British Medical Association for fifty years.

Dr. James Williamson Patrick, who died suddenly in his garden at Leicester last September, had been a member of the British Medical Association for over thirty years. Born at Killeshandra, County Cavan, in 1862, he received his medical education in Dublin and Edinburgh. He obtained the diplomas L.R.C.P., L.R.C.S.Ed. in 1886, and the M.D. degree of Durham in 1902. After holding hospital appointments, and practising for a time in London, Norwich, and elsewhere, he went to Leicester in 1890, where he remained in general practice in the Stoneygate district until his retirement in 1923. He was a family physician of the best type, and was widely respected and popular. He opposed the panel system, and never joined it. He interested himself in the Territorial Force, and held the commission of captain before 1914. He served from 1915 at the Fifth Northern Base Hospital in Leicester, and was on the staff of the North Evington War Hospital. In 1918 he went out to the base hospital at Amiens. Dr. Patrick engaged in various sports, and formerly played hockey for Stoneygate ; he was a member of the Leicestershire Rugby football, cricket, and golf clubs. He was a keen Freemason, and a P.M. of the Albert Edward Lodge. In 1895 he married the daughter of Sir William Vincent of Leicester ; he is survived by his widow, a daughter, and two sons, one of whom is in the medical profession.

On September 29th South Kensington lost one of its senior practitioners in the person of Frederick Ashton Warner, known to hosts of friends as "Fred"—and one of the most popular, both with his patients and his colleagues, that have ever practised there for the length of time that he did. Born in 1859 in Trinidad, the son of N. F. Warner, C.M.G., barrister-at-law, he was educated at the College, Trinidad, and at St. George's Hospital, where he was a contemporary of, and shared "diggings" with, his lifelong friend Dr. H. A. des Vœux. He became M.R.C.S. in 1884, L.R.C.P in 1886, and F.R.C.S.Ed. in 1887. In the latter year he started practice in South Kensington, which he relinquished as lately as the beginning of this present year, owing to the effects of a severe illness in 1934. Up to the latter date Warner was a man who looked and acted like a man fifteen or twenty years younger than his real age. At various times he held appointments in connexion with two or three children's hospitals, an eye hospital, and a midwifery service. During the war he was Visiting Medical Officer to the Weir Red Cross Hospital at Balham, and also temporary surgeon to out-patients at his old school, St. George's. To his great gratification he was, in recognition of this, later granted the honorary but coveted distinction of "Visiting Apothecary" to St. George's Hospital. Though much beyond military age, he was not satisfied to be out of the war zones, and spent some months as assistant surgeon to the French Red Cross Hospital at Arc-en-Barrois. It is, however, less as an energetic worker for hospitals than as one of the very best type of general practitioner that he will be long held in remembrance: wide outlook, clinical sagacity, and genial sympathy were among the qualities that brought him a large practice. At the meetings of the Kensington Medical Reading Society, of which he had been a member time out of mind, he will be especially missed by his medical neighbours. He was a keen cricketer and hunting man in earlier days, and kept up his lawn tennis until comparatively a few years ago. Mr. Warner leaves a widow, a daughter, and two sons, both of them fairly senior members of the Civil Service.

The death took place on December 4th at his home in Renfrew of Dr. William Goldie Stevens. He was born in 1842, and took his medical course at Glasgow University in the sixties of last century, where he was a student in the wards of Lord Lister and was present at the first operation performed by that surgeon in the Royal Infirmary of Glasgow. This was before Lister began his researches on antiseptics—Dr. Stevens qualified in 1863. After qualifying, he acted for a time as surgeon on Anchor liners from Glasgow to America, and assisted his father, who was a medical practitioner in Ardrossan. He then settled for a time in practice in Glasgow, and later in Renfrew. In 1888 he was appointed medical officer of health for the burgh of Renfrew, a position which he held for over forty years, and when he retired from this post his services were so much appreciated that the Town Council retained him in the capacity of a consultant. As a young man he took a great interest in the Volunteer movement in its early days, and ultimately attained the rank of surgeon lieutenant-colonel in the 2nd Volunteer Battalion of the Argyll and Sutherland Highlanders, becoming later a lieutenant-colonel in the Sanitary Service of the Territorial R.A.M.C. He also took up warmly the open-air treatment of tuberculosis in the early days of that movement, and had done much to further its development in his capacity of a medical officer of health. For many years he enjoyed a large practice in Renfrew, and his genial personality was greatly appreciated by his patients. Dr. Stevens is survived by his widow and a grown-up family, of whom the eldest son, Dr. John Barr Stevens, is in medical practice in the North of London.

The death took place suddenly at Ayr on December 1st of Dr. Andrew Young, who had been engaged for over thirty years in medical practice in that burgh. Dr. Young graduated M.B., C.M. at Edinburgh in 1888, and after a period of practice at Crieff he took up work in his native town of Ayr, and at the time of his death was the senior physician of Ayr County Hospital. He had held various other public appointments, including that of medical officer to H.M. Prison, Ayr, for some twenty years. He joined the British Medical Association in 1904.

Universities and Colleges

UNIVERSITY OF LONDON

At a meeting of the Senate, held on November 20th, the regulations relating to exemption from the First Examination for Medical Degrees (*Red Book*, 1935–6, p. 262, para 2 (iii); *Blue Book*, September, 1935, p. 246, para. 2 (i)) were amended by the addition of the following:

Students who have passed the Intermediate Examination in Household and Social Science will be exempted from the First Examination for Medical Degrees.

The regulations relating to exemption by thesis at the M.D. Examination were amended by the omission of the fifth paragraph of the section headed Thesis (*Red Book*, 1935–6, p. 287; *Blue Book*, September, 1935, p. 271), and by the substitution of the following paragraph:

In Branches I (Medicine), III (Psychological Medicine), IV (Midwifery and Diseases of Women), V (Hygiene), and VI (Tropical Medicine), if the thesis be judged of sufficient merit by the Examiners the candidate may be exempted from a part or the whole of the written examination; in Branch II (Pathology) if the thesis be judged of sufficient merit by the Examiners he may be exempted from a part or the whole of the written and practical examinations.

It was resolved that the regulations for the Academic Post-graduate Diploma in Psychological Medicine be similar to those for the present Post-graduate Diploma in Psychological Medicine (*Green Book*, 1935–6, p. 122) with the exception of para. 3, and that para. 3 read as follows:

(The words in italics have been added and Section I has been redrafted to suit Internal Students.)

The Examination for the Diploma is open to any candidate whose name is on the Medical Register, *and who has registered, at least six months before the date of the Examination, as an Internal Student at a School of the University recognized for the purpose* provided that, before being admitted to Part B of the Examination, the candidate shall be required to produce evidence that he has had the clinical experience and attendance specified under headings I and II below.

I

The candidate shall either (*a*) have taken a full-time course of study extending over not less than six months at a School of the University recognized for the purpose, or (*b*) shall have taken a half-time course of study at such School extending over not less than twelve months.

II

In addition, the candidate shall have attended for not less than twenty-six full mornings or afternoons the *clinical* practice of approved institutions, hospitals, clinics, or other establishments in each of the following subjects (a total of 104 attendances), namely:

(*a*) Mental Disorders (in the case of a candidate whose experience under I has been in an institution for mental defectives); (*b*) Mental Deficiency (in the case of a candidate whose experience under I has been in an institution for mental disorders); (*c*) Neurology; (*d*) Psychoneuroses and early Psychoses; (*e*) Mental Retardation and Delinquency.

The conferment of Degrees on Doctors of Science (Economics), Science, and Medicine took place at the University on November 21st. In the course of his address the Chancellor referred to the fact that the University would celebrate its centenary in November, 1936. He welcomed Mr. Herbert L. Eason's first public appearance at a University function, and congratulated him on assuming the office of Vice-Chancellor. The Chancellor also said that he would be more than disappointed if November of next year did not find the University in its new building.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examinations indicated:

FINAL MEDICAL EXAMINATION, PART II.—*Medicine:* B. Lapedus, S. J. H. Douglas, B. Rogol, G. S. Caithness, H. B. Sutton, R. C. O'Grady, W. S. M'Bride, E. S. Dorman, G. H. B. Roberts, D. P. Harris, D. H. T. Duggan. Old regulations: L. W. M'Caughey. *Surgery:* S. J. H. Douglas, D. H. T. Duggan, B. E. W. Aldwell, J. C. Gaffney, A. F. H. Keatinge, E. Cowan, H. C. Bourke, B. M. O'Sullivan, H. B. Sutton, G. W. M. Elliott, S. B. Sachs, D. P. Harris, J. A. Hamilton, J. T. Wellwood, E. S. Dorman, J. R. Shapiro, P. Citron, R. C. O'Grady, P. St. G. Robinson. *Midwifery:* *H. S. Boyce, *W. A. Gillespie, G. W. Patterson, M. Friedman, W. D. Chesney, M. Levy.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—B. E. Wurm.

* Passed with high marks.

UNIVERSITY OF BRISTOL

N. J. England has been approved at the examination for the degree of M.D.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on December 2nd, with the president, Professor Archibald Young, in the chair, the following were admitted Fellows of Faculty: John Charles Alexander, M.B., Ch.B., William Herbert Brown, M.D., James Gibson Graham, M.D., Andrew Fergus Hewat, M.D., F.R.C.P.Ed., Isaac Chesar Michaelson, L.R.C.P. and S.Ed.

The president intimated that £600 had been received in payment of a legacy to the Faculty by the late Dr. Freeland Fergus, who was its president during the years 1919–22.

The Services

HONORARY PHYSICIANS TO THE KING

The following have been appointed Honorary Physicians to the King: Major-General T. S. Coates, O.B.E., late R.A.M.C. (vice Major-General R. B. Ainsworth, C.B., D.S.O., O.B.E., late R.A.M.C., retired pay); Colonel J. Heatly-Spencer, O.B.E., late R.A.M.C. (vice Major-General P. H. Henderson, C.B., D.S.O., late R.A.M.C., retired pay); and Lieut.-Colonel R. N. Chopra, C.I.E., I.M.S., promoted Brevet Colonel (vice Major-General Sir Robert McCarrison, C.I.E., I.M.S., retired pay).

HONORARY SURGEONS TO THE KING

The following have been appointed Honorary Surgeons to the King: Major-General O. Ievers, D.S.O., late R.A.M.C. (vice Major-General J. F. Martin, C.B., C.M.G., C.B.E., late R.A.M.C., retired pay); Colonel E. W. C. Bradfield, C.I.E., O.B.E., I.M.S., V.H.S. (vice Major-General H. R. Nutt, I.M.S., retired pay); and Lieut.-Colonel A. A. C. McNeill, I.M.S., promoted Brevet Colonel (vice Colonel H. E. Stanger-Leathes, I.M.S., retired pay).

PARKES MEMORIAL PRIZE

The Parkes Memorial Prize for 1935 has been awarded to Surgeon Lieutenant J. L. S. Coulter, R.N., for his essay entitled "Preparation for Tropical Service in the Royal Navy." This prize is awarded annually to the writer of the best essay on a subject connected with naval or military hygiene.

R.A.F. DENTAL BRANCH

An Air Ministry Order (A.304/35) has been issued introducing revised conditions of service for officers of the Dental Branch of the Royal Air Force.

The scales of pay of officers of the rank of flight lieutenant and squadron leader have been increased as from October 1st. A number of appointments will be upgraded, thus enhancing the promotion prospects of officers holding permanent commissions. The rates of gratuity for officers holding non-permanent commissions have been increased, and are now £350 for three years', £1,000 for six years', and £1,500 for ten years' service. Provision has been made for further improving the career of dental officers by raising the compulsory retiring ages for group captains and for wing commanders and below to 57 and 55 respectively. Provision is also made, for the first time, for the retired pay of a group captain, the maximum rate being £724 per annum.

Applications for appointment should be addressed to the Secretary (D.M.S.), Air Ministry, London, W.C.2.

THE ARMY DENTAL CORPS

New conditions under which commissions in the Army Dental Corps will in future be granted to dental surgeons have been promulgated by a Royal Warrant published in an Army Order.

Entry will be by short service commissions for six years, at the end of which time officers will be eligible for a gratuity of £1,000, unless selected for permanent commissions. Officers will enter the Service as lieutenants. Promotion to the rank of captain will be after one year's service, and to the rank of major after ten years' service instead of after three and a half years and twelve years respectively, as at present. The increments in pay, which have hitherto been given after eight,

ten, fifteen, eighteen, and twenty years' service as a dental officer, will in future be given two years earlier in each case. The establishment of permanent officers will be maintained at a number calculated to ensure reasonable prospects of promotion to the rank of lieutenant-colonel for all officers granted permanent commissions in future. In addition, certain selected officers may be promoted to the rank of colonel or major-general.

Full particulars of the conditions can be obtained either by personal application or by letter addressed to the Assistant Director-General, Army Medical Services (for the Dental Service), The War Office, London, S.W.1.

The annual dinner of medical officers of No. 14 Stationary Hospital was held at the Trocadero Restaurant, London, on December 6th, with Colonel C. R. Evans in the chair. There was a larger attendance than usual. Proposing the toast of "The Hospital," Colonel Evans drew attention to the variety of interesting experiences which had rendered its history unusually significant, and it was decided later in the evening to call upon officers to forward to Dr. H. L. Tidy, 39, Devonshire Place, W.1, notes of their personal recollections of outstanding events, so that a volume could be compiled for private circulation. Since these reunions began in 1921 a considerable proportion of the hospital staff has been present in various years, and the regular continuance of the dinner has now been assured.

DEATHS IN THE SERVICES

Colonel Arthur England Johnson Croly, late R.A.M.C., died in London on October 23rd, aged 81. He was born on March 9th, 1854, and was educated at Trinity College, Dublin, where he graduated B.A. in 1878 and M.A. in 1889. He took the L.K.Q.C.P. in 1879, the L.R.C.S.I. in 1879, and the F.R.C.S.I. in 1887. Entering the Army as surgeon on March 6th, 1880, he attained the rank of colonel on December 29th, 1908, and retired on March 9th, 1911. From 1899 to 1903 he was surgeon to the Governor of Bombay. He served in the second Afghan War in 1880, with the Southern Afghanistan Field Force; and on the North-West Frontier of India in the Tirah campaign of 1897–8, receiving the medal with two clasps. He also rejoined for service in the war of 1914–18.

Colonel James McCloghry, Bombay Medical Service (ret.), died on September 30th, aged 83. He was born at Riverstown, Sligo, on May 24th, 1852, and was educated in the school of the Irish College in Dublin, taking the L.R.C.S.I. in 1872 and the L.K.Q.C.P. in 1873. Entering the I.M.S. as surgeon on March 31st, 1875, he became colonel on June 20th, 1905, and retired on January 13th, 1909. He served in the Afghan War in 1879–80, receiving the medal; and on November 9th, 1901, received the Kaisar-i-Hind medal, first class.

Lieut.-Colonel Richard Pratt Bond, R.A.M.C. (retired), of Woodside, Copthorne, Sussex, died suddenly at Cheltenham on December 2nd, aged 79. He was born on May 19th, 1856, was educated at Cheltenham College and at King's College, London, and took the L.R.C.P.Ed. in 1880 and the M.R.C.S. in 1881. After holding the posts of house-surgeon at King's College Hospital and senior resident officer at the Royal Free Hospital, he entered the Army as surgeon on February 3rd, 1883, became lieutenant-colonel after twenty years' service, and retired on May 19th, 1911. He served in the Sudan; in the Nile campaign of 1884–5, receiving the medal and the Khedive's bronze star; in the Sudan Frontier Field Force in 1885–8, including the action at Gamaizah (clasp); in South Africa in 1899–1900, taking part in the advance on Kimberley, including the actions at Belmont, Enslin, Modder River, and Magersfontein; and in operations in the Orange Free State, including the action of Paardeberg, Poplar Grove, and Dreifontein, and received the Queen's medal with two clasps. He rejoined for service in the war of 1914–18, serving as an A.D.M.S. in England.

Lieut.-Colonel William Keith Hatch, Bombay Medical Service (ret.), died at Cheltenham on November 27th, aged 80. He was born at Ahmadnagar, in the Bombay Presidency, on December 6th, 1854, the son of Captain William Sparkes Hatch of the Bombay Artillery, and was educated at Aberdeen University, where he graduated M.B., C.M. in 1876, and at King's College, London, taking the M.R.C.S. in 1876. Entering the I.M.S. as surgeon on March 31st, 1877, he became lieutenant-colonel after twenty years' service, and retired on November 15th, 1903. He served in the second Afghan War in 1880, receiving the medal. Most of his service was passed in civil employ in the Bombay Presidency, where he was for long civil surgeon of Poona.

Medical Notes in Parliament

[From our Parliamentary Correspondent]

In the House of Commons the Expiring Laws continuance Bill was introduced on December 4th, and the Employment of Women and Young Persons Bill on December 5th. The latter is to make provision for employment of women and young persons in factories and workshops on a system of shifts. Both Bills are Government measures, and were read a first time. Their second readings were set down for December 12th. The Expiring Laws Continuance Bill was read a second time in the House of Commons on December 9th.

The debate on the Address ended in the House of Commons on December 10th, when statements were made by Mr. Baldwin and Mr. Eden on foreign affairs and by Sir Kingsley Wood on housing and the programme of the Ministry of Health.

A petition from London and elsewhere against vivisection was presented in the House of Commons on December 10th.

The King's Speech

In the House of Commons discussion on the Address in answer to the King's Speech continued till December 10th. On December 4th Mr. Gallagher, in commenting on a speech by Lady Astor, remarked that in the division of Plymouth, which she represented, the medical officer last year reported that 50 per cent. of the children attending the schools were suffering from disease.

Physical Training

Sir Francis Fremantle spoke of the difficulty of providing for unemployed young men physical training which did not sicken by repetition, routine, and meaninglessness. The Army, Navy, or Air Force provided better training systems. It was a great advantage that the King's Speech promised attention to physical education, but those concerned with the physical improvement of the people knew how hard it was to interest people for any time in physical education. New ideas had been started at the Lucas-Tooth gymnasium in Tooley Street for the benefit of men from unemployed areas. The improvement in these men was extraordinary, and the work they did was amusing and recreative. Sir Francis hoped that care would be taken to co-ordinate school medical work with the general medical provisions for the health of the people, not only during school age, but afterwards, with continuity of inspection and assistance. The gap before school life had been filled. He hoped the gap between school life and the employment age would also be filled. He regretted that the King's Speech did not promise to bring town-planning schemes into force at once during the present rush of building, and he hoped the Ministry of Health would secure the reservation of sites of halls and buildings for community purposes in areas which were being built up. He added his welcome to the forthcoming measure setting up an organized service of salaried midwives, but as one who helped to put into operation the Midwives Act, 1902, he warned the House that thorny issues would be raised, including the question of how far the State should support one profession, however useful? He appealed to all Parties to give the Bill an unopposed passage before the summer holidays.

During the same debate, on December 6th, Mr. David Grenfell moved on behalf of the Labour Opposition a hostile amendment to the Address.

Malnutrition

Mr. BOOTHBY asked the House to give attention to the results of investigations on malnutrition, made public by Sir John Orr, head of the Rowett Research Institute. The difference between rats fed on an ideal diet and those fed on the typical food given to children of the working classes in Peterhead was fantastic, and the immunity, in comparison with other rats, of the ideally fed rats from disease was also striking. Sir John Orr tentatively concluded that diseases due to malnutrition or to wrong nutrition were still prevalent, particularly in the distressed areas. Mortality rates of women and children in the distressed areas were admittedly higher than in other parts. Politicians had stressed housing too much at the expense of food. Cheap food meant less poverty, less disease, and a lower cost of social services. Sir John Orr pointed out that an expenditure of 10s. per head per week on food, which was taken as the lowest level, meant a consumption per head of one pint of liquid milk a week. That was totally inadequate. National health would be increased by increased consumption of animal products and of fresh fruit and vegetables. Mr. Boothby asked for a more ambitious policy in the provision of milk for children, particularly in distressed areas. He would like to see liquid milk given free to children under 5 years of age and to mothers.

Mr. KIRBY spoke of the shortage of houses in Liverpool. The medical officer of health was allowed to put applications on a priority list for two reasons: very serious overcrowding, or the existence of tuberculosis. On his list were over 2,000 names of applicants, few of whom had the slightest opportunity of being accommodated, though the medical officer said they were the most urgent cases.

Lord EUSTACE PERCY referred to Mr. Boothby's proposal that children under 5 years of age should receive free milk. On Tyneside there was a prejudice against children going to school before 5. The growth of the nursery school in special areas under special subsidies from the Special Commissioners had a bearing on this question. Milk, as well as other foods, was provided in nursery schools as part of the curriculum.

Midwifery Service: Proposed Legislation

During the debate on the Address, on December 10th, Sir KINGSLEY WOOD gave details of the progress of slum clearance up to the end of November, and referred to the Government's projected legislation for improvement of the midwifery service. He said there was urgent need of a sound midwifery service, to ensure to every woman who required it skilled care in childbirth. A Bill was now being drafted, and the Government hoped to introduce it early next year. In the interval he would consult with the appropriate associations, including representatives of the voluntary associations. There were obvious gaps in the system of health insurance between the time boys and girls left school and that when they entered into insurable employment. There was also the difficulty in the present national health insurance and contributory pension scheme that many people at work on their own account were unable to enter into the insurance and pension system, although their circumstances did not differ from that of other insured persons. The Government would introduce legislation to deal with these important matters, and steps were already being taken in that direction. The Government hoped to introduce these measures at as early a date as possible, but the Whip warned him that the whole time of the House was not at the disposal of the Ministry of Health.

Water Supply Schemes

On December 5th Sir KINGSLEY WOOD told Sir Percy Hurd that in rural areas generally good progress was being made in the provision of water supplies. State grants totalling £800,000 had been provisionally allocated for schemes for 1,660 parishes, involving an estimated capital cost of nearly £5,000,000. In addition, since April 1st, 1934, loans to the amount of £1,170,000 had been sanctioned for schemes for 400 parishes.

Milk as a Medical Benefit

Colonel MOORE asked Sir Kingsley Wood, on December 5th, whether, with a view to improving the nation's health, he would introduce a scheme for enabling milk to be prescribed as well as medicine under the national health insurance scheme in cases where doctors were of the opinion that the health of the insured person in question would benefit thereby. Sir KINGSLEY answered that the National Health Insurance Acts provided only for the supply of medicines and approved appliances, and there was no power to introduce the scheme suggested. Extensive provision had been made in schemes administered by local authorities acting either as local education authorities or as maternity and child welfare authorities for the supply of milk free and at reduced rates. Colonel MOORE asked if Sir Kingsley Wood would amend the law to bring milk within the national health insurance scheme. Sir KINGSLEY replied that he would not, as he did not think such supply appropriate to the national health insurance scheme.

Paying Patients Bill

In the House of Lords on December 10th Lord LUKE moved the second reading of the Voluntary Hospitals (Paying Patients) Bill. He said that the Bill received a second reading in the House of Commons last July, but there was no time for its passage through its later stages. In now moving the second reading of the Bill he desired to clarify the considerations which animated those responsible for its introduction and to remove misconceptions. The Bill was to put all hospitals on a level, so far as possible, in their power to meet certain present-day needs. Voluntary hospitals with modern trust deeds had no legal hindrance to prevent them from providing for all classes needing hospital treatment. Their primary function was to provide beds for the sick poor in the ordinary sense of the term. They often provided a comparatively small number of pay-beds for the black-coated poor and the middle and professional classes, who were able to pay a moderate weekly charge but could not afford the amount they would have to pay elsewhere.

They sometimes also provided a still smaller number of beds for patients who needed treatment, and who, however well off they might be, were often unable to obtain the treatment anywhere except at a hospital at rates appropriate to their means. The need for this new service resulted partly from the modern developments in diagnosis and treatment and partly from recent economic changes, which had produced what were called the "new poor." These new services had been provided in addition to, and not in elimination of, the maintenance and existence of the ordinary beds. In some hospitals the trust deeds were settled long ago, when medical treatment was a very simple and inexpensive affair and hospital accommodation was only needed by the very poor. The result was that at some hospitals these ancient trusts were so worded that the hospital could not legally provide for any patients other than the sick poor in the original sense of the term, even with money specially collected or received for the purpose, or if the hospital had occasionally to treat any other patients because the treatments were unobtainable elsewhere it had no legal power to charge them what they were able to pay. Nor could it provide special accommodation for them, even if it did not do it at a profit. It was certainly hard on the older hospitals not to be able to provide these modern facilities which some other hospitals could.

The Bill would give the Charity Commissioners power in suitable cases to remove these anomalies by enabling such hospitals to provide pay-beds so long as it was not done at the expense or the detriment of the primary work which they were doing of providing for the sick poor. The Bill contained ample precautions against any risk that trusts for the direct benefit of the sick poor would be disregarded. In addition to the control given to the Charity Commissioners, there were special safeguards introduced in the Bill last session by the Government to ensure that funds and property acquired under the original trusts could not be diverted to any other purpose. In actual practice experience showed that the provision of pay-beds benefited the whole community, including the sick poor. There could be no fear that anything in the Bill would enable hospitals to diminish their work for the sick poor even if they wanted to do so. The safeguards would prevent them from reducing their ordinary work, but the powers given by the Bill would assist them to increase it.

Viscount GAGE said that when the Bill was first introduced the Government considered that, provided certain precautions were put in with the object of maintaining the existing trusts it could thoroughly support the measure. Those amendments to secure that the objects of the original trusts were maintained and the rights of the poorer patients safeguarded were agreed between the promoters and the Government, and appeared in this Bill. In these circumstances the Government was fully in support of the Bill.

The Bill was read a second time.

Insulin for Unemployed

On December 10th, in reply to Mr. G. Griffiths, who asked if the Minister of Health was prepared to make arrangements for all diabetics who had run out of insurance benefit to be given insulin free without any means test, Sir KINGSLEY WOOD said he had no powers to make such arrangements. Local authorities were empowered to provide insulin for persons in need of it who were unable to purchase it out of their own resources.

Survey of Overcrowding

Sir KINGSLEY WOOD, replying on December 10th to Mr. H. Williams, said he had fixed April 1st, 1936, as the date by which the survey by local authorities under the Housing Act, 1935, to determine the extent of overcrowding in their respective areas, should be completed. He had every reason to believe that local authorities generally would complete the task in the allotted time. In most areas the survey had already started, or would be begun at an early date.

Sterilization of Hairdressers' Equipment.—Mr. HICKS, on December 5th, asked the Minister of Health to make an order to compel hairdressers and barbers to sterilize brushes, combs, razors, and other implements used in the course of their trade, with a view to preventing the dissemination of vermin and skin and other diseases. In reply Sir KINGSLEY WOOD said that as a general rule there was little risk of such a state of uncleanliness in a hairdresser's establishment as to cause or promote the spread of disease. It was not necessary to make such an order as Mr. Hicks suggested. He had no information of cases where disease had been spread because the tools used in barbering had not been thoroughly sterilized.

Fish Furunculosis Report.—On December 9th Dr. ELLIOT informed Captain Cunningham-Reid that he had considered the report of the Furunculosis Committee. The Secretary of State for Scotland and he were discussing the problem with fish farmers and other interested parties, with a view to reintroduction of legislation on the subject.

Foot-and-Mouth Disease.—Outbreaks of foot-and-mouth disease in Cheshire and East Sussex, confirmed on November 26th and 27th respectively, have been confined to the single case.

Medical News

The Birmingham Civic Society recently awarded its gold medal to Sir Gilbert Barling, Bt., consulting surgeon to the Birmingham General Hospital, who was Pro-Chancellor of Birmingham University for twenty years, and at one time dean of the Faculty of Medicine. The Lord Mayor, in presenting the medal, said that it was in recognition of Sir Gilbert's great services to the intellectual and aesthetic life of the city.

The House of the British Medical Association, including the Library, will be closed for the Christmas holiday from 6 p.m. on Tuesday, December 24th, to 9 a.m. on Friday, December 27th (Library 10 a.m.).

The seventeenth annual dinner of the Royaumont and Villers Cotterets unit of the Scottish Women's Hospitals took place at the Forum Club on St. Andrew's Day, November 30th, the twenty-first anniversary of the arrival of the first members of the unit in France. Mrs. Ivens-Knowles, C.B.E., M.S., presided, and among the sixty members of the unit present were Miss Ruth Nicholson, M.S., and Drs. Agnes Savill, Courtauld, Estcourt-Oswald, Martland Nalters, and Buckley. Mrs. Robichaud of Canada was the guest of honour.

A meeting of the Society of Medical Officers of Health will be held at 1, Thornhaugh Street, Russell Square, W.C., on Friday, December 20th, at 5 p.m., when there will be a discussion on "Psychology in Relation to Public Health," to be opened by Dr. Henry Wilson and Dr. S. W. Savage.

The British Red Cross Society (14, Grosvenor Crescent, S.W.1) has arranged a course of instruction in first-aid in chemical warfare for doctors and trained nurses, on Mondays and Wednesdays, at 8 p.m., from January 27th. The course includes eight lectures and practical work, followed by an examination for the society's certificate on February 24th. Applications (on the specified form) must be received by the matron-in-chief at the above address by January 8th.

The Fellowship of Medicine announces that special courses during the early part of 1936 will include dermatology at St. John's Hospital, January 2nd to 30th; cardiology at National Hospital for Diseases of the Heart, January 13th to 24th; urology at St. Peter's Hospital, January 20th to February 1st; proctology at St. Mark's Hospital, February 3rd to 8th; neurology at West End Hospital for Nervous Diseases, February 3rd to 8th; gynaecology at Chelsea Hospital for Women, February 10th to 22nd. Week-end courses (especially suitable for general practitioners) will be given as follows: heart and lung diseases at Royal Chest Hospital, January 18th and 19th; physical medicine at St. John Clinic and Institute of Physical Medicine, February 8th and 9th. An evening course of surgical tutorial lectures, intended for Final F.R.C.S. candidates, will be held on Tuesdays and Thursdays at 8.30 p.m. at National Temperance Hospital, from January 14th to March 5th. The full list of special courses for the year may be obtained on application to the Fellowship of Medicine, 1, Wimpole Street, W.

Under the auspices of the Dutch Red Cross an ambulance is to be sent to Abyssinia directed by Dr. Winckel, a specialist in hygiene.

King Edward's Hospital Fund for London has published a further issue of the time-table, prepared by its out-patient arrangements committee, to minimize the waiting, with possible hardship, which results from patients attending hospital out-patient departments at the wrong hour or even sometimes on the wrong day. Copies of the present issue, revised to November, 1935, may be obtained free on request from the publishers, Messrs. Geo. Barber and Son, Ltd., Furnival Street, E.C.4.

Colonel H. F. Humphreys, O.B.E., M.C., T.D., Honorary Physician to the King, and honorary surgeon to the Birmingham Dental Hospital, has been appointed Deputy Lieutenant for the County of Warwick.

The October issue of the *Journal Médical Français* is devoted to the physiological work of Professor Pavlov. The November issue of the *Revue d'Hygiène et de Médecine Préventive* is devoted to streptococcal infections. The issue of the *Revista di Chirurgie* for October contains the proceedings of the forty-second congress of the Italian Society of Surgery recently held at Bologna.

The Nobel Prize in Chemistry has been awarded to Monsieur and Madame Joliot, the son-in-law and daughter of Pierre and Marie Curie, for their work on the synthesis of radioactive elements; and the Nobel Prize in Physics has been awarded to Professor James Chadwick, F.R.S., of Liverpool, for his discovery of neutron.

Professor Archibald Young, who has held the Regius Chair of Surgery at Glasgow University since 1924, was recently made a doctor *honoris causa* of Strasbourg University. Professor Réné Leriche, who occupies the chair of surgery at Strasbourg, and is himself an honorary LL.D. of Glasgow University, delivered an address on the occasion, in which he gave a short sketch of the history of the Glasgow Medical School.

With the exception of Louvain, all the Belgian universities now have a medical man as their rector, Professor A. Dustin of Brussels having been the last to be elected.

Dr. P. Manteufel, professor of hygiene at Düsseldorf, Dr. Fritz Specht, professor of laryngology at Erlangen, and Dr. H. v. Haberer, professor of surgery at Cologne, have been nominated rectors of their respective universities.

Dr. Georges Duhamel, who was recently appointed editor of the *Mercure de France*, was elected a member of the Académie Française on November 28th, in succession to the late historian G. Lenôtre.

Professor Weinberg of the Institut Pasteur, Paris, and Dr. Crouzon, the neurologist, have been elected members of the Académie de Médecine.

Dr. H. S. Gasser, professor of physiology at Cornell University, New York, has been nominated director of the Rockefeller Institute, in succession to Dr. Simon Flexner.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, five lines).

The **TELEGRAPHIC ADDRESSES** are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Pruritus Vulvae et Ani

"F. A." writes in answer to the query published on November 23rd (p. 1029): "Perplexed" should search for the cause of the itching. Is it due to diabetes, Bright's disease, jaundice, pregnancy, gastric and intestinal toxins, rheumatism, blood dyscrasias, or metabolic products affecting nerve endings (acidosis, etc.), or the dye or material of underwear, or, and this is by no means unlikely, some sexual maladjustment or douching with an irritant? If the pruritus is truly "idiopathic" some or all of the following may give a measure of relief: (1) Two or three exposures to ultra-violet light at three- to four-day intervals with the parts well retracted in the lithotomy position. Cold bathing and an antiseptic dusting powder gives relief in the intervals. (2) Intramuscular injections of collosol calcium with ostelin —2 c.cm. daily for a week. (3) Halmagon given intramuscularly in acute stage and then orally. A maintenance dose should be taken to prevent relapse. I should be interested to hear whether "Perplexed" finds any of these suggestions efficacious.

"F. W. M." writes: I would suggest injections of A.B.A. (Allen and Hanburys). I have used this method successfully in several cases of pruritus and in only one case did it fail, and then an ointment gave relief for two years. It was as follows: ung. menthol ʒ j, zinci oxidi ʒ ij, aq. rosae ʒ iv, ung. picis liq. ʒ iv, lanolin ʒ j. The injections of A.B.A. should be given fanwise at the site of election. I believe Allen and Hanburys give full directions.

"J. P. B." asks us to state that in the second paragraph under "Pruritus Vulvae et Ani," on page 1138 of last week's issue, the dose of parathyroid gland given in tablet form with calcium lactate should have read "1/40 to 1/10 grain," not 1 grain.

Climate for Asthma

"M. U." writes: A patient who suffers from asthma has found that the climate of Copenhagen gives her almost complete relief from attacks. As she cannot go there now I would like to know of any place in England approaching the climatic conditions found in Copenhagen.

*** We referred this inquiry to Dr. R. Fortescue Fox, who replies: A number of health resorts on the British coast have reported good results in asthma. The choice of place depends on the season of the year, where the patient lives (for example, a dweller in the east often does well in the west), the time of life, and if there are signs of hypertonia (arterial tension, etc.) or bronchial catarrh. In the colder months of the year many cases have lost their symptoms in the north-west, in places with special shelter, like Colwyn Bay and Grange-over-Sands. For others, especially older patients with bronchial liabilities, Torquay, Dartmouth, or Teignmouth may be preferred. There is also in the south-east Hastings, where breathing is often immediately relieved, not to mention Forres in N.E. Scotland. The winters in Copenhagen are much colder than all parts of the British coast. (For details see *Handbook of the British Health Resorts Association*: edition, 1935.)

Income Tax

Purchase and Sale of a Practice

"TAX" bought a practice in 1932 and sold it again in 1935 at a profit, buying a share in another practice with the proceeds. Can the inspector of taxes demand to know the sale price, and can the profit on sale be taken into the income tax liability?

*** The profit on sale is certainly not liable to income tax, and therefore there seems to be no justification for the inspector's inquiry as to the amount of the sale price.

Partnership Arrangement

"X. X." states that it is proposed to make the following arrangement with a view to giving the incoming partner, "C.," sufficient share of the profits to ensure he receives the maximum income tax allowances. Instead of receiving one-seventh share he is to have one-third, but he is to pay additional consideration each year in the form of a sum equal to the difference between one-third and one-seventh of the year's profit. He can make further capital payments, in which case the yearly payments will be reduced.

*** The arrangement can certainly be made in a manner which would be legally binding, but we doubt whether it will effect the intended purpose. We are of opinion that the sums payable yearly by "C." to the benefit of the

other two partners would be held to be "annual payments" and consequently income of the receiving partners. They would rank as "investment income" in their hands, and as they are not ultimately "C.'s" income he could obtain no relief in respect of such portions of his share of the profits as he was bound to pass on under the arrangement.

LETTERS, NOTES, ETC.

Medical Register: Office Edition

Mr. MICHAEL HESELTINE (Registrar of the General Medical Council) informs us that orders for the office edition of the *Medical Register*, 1936, published by the Council at the special price of 10s. a copy, post free, must be received, with a remittance, at the office of the Council, 44, Hallam Street, Portland Place, London, W.1, not later than December 31st, 1935. The office edition differs from the ordinary edition of the *Register* to the extent that it does not contain reprints of the Medical and Dentists Acts and other preliminary matter, and is printed on less expensive paper and bound in boards. It includes, however, the same entries relating to registered medical practitioners as are included in the ordinary edition, and is therefore equally serviceable to public authorities and others who find it necessary to ascertain whether particular persons are registered medical practitioners or not. The Council also prepares monthly lists of names added to, and removed from, the *Register*, and particulars of the terms and conditions upon which copies of these lists may be made available can be obtained on application to the office of the Council.

Contraceptive Technique

Dr. E. FISHER (London, S.W.13) writes: It is interesting to note that in the review (*Journal*, November 9th) of a recent book on contraceptive technique it is remarked: "Writers on this subject . . . can in fact only with difficulty say anything to be distinguished in form and in substance from what others have already said again and again." But something should be added to this—namely, that the foundations of present-day contraceptive technique were laid by Dr. Marie Stopes in *Wise Parenthood* in 1918 and in *Contraception* in 1923. All books on birth control post-dating these works are, as your reviewer says, treading in the same footsteps, but if those who now read these books would read those published before 1918 they would see what landmarks in medical history her books were and still are, though most present-day writers fail to acknowledge their indebtedness to her.

Death Rates and Environment

Dr. E. G. L. BYWATERS writes: In your issue of December 7th there is an editorial on an article in the *New Statesman* of November 23rd which was concerned to point out that the standardized death rate for the depressed areas is a lot higher than the general S.D.R. I feel as a member of the B.M.A. that it is against our best interests to indulge in such partial criticism and by such patronizing and gratuitous condescension to antagonize a universally respected contemporary. Because "statistical truth was revealed to Somerset House more than a century ago," is it honestly to be inferred that this "has apparently escaped our contemporary's eye," and that "the *New Statesman* has discovered that age is a factor of mortality"? Such language and such reasoning befits better the tendentious pages of the Press-Barons than a reputable technical journal such as ours. What have the 1934 figures to do with previous higher or lower figures? Because, say, maternal mortality figures have improved since 1850, shall we cease to draw attention to the fact that they are still bad? Because medical journalism has improved since it published personal criticism of eminent physicians shall we cease to deplore any lapses that may occur to-day? The *B.M.J.* should have more use for editorial space than to devote it to such petty complacency.

Medical Treatment for Septic States

Dr. R. LARKIN (London, S.E.1) writes: The recent discussion in the correspondence columns of the *Journal* on the treatment of puerperal streptococcal septicaemia indicates divided opinion as to the help to be expected from the use of anti-streptococcal serum. In a case of ordinary whitlow, with influenza at the same time, I found that the quinine and potassium citrate mixture I use as a routine treatment for the influenza had a modifying influence on the progress of the whitlow, which I had incised. Seeing that I had found something to combat sepsis, and looking round for some improvement, it occurred to me to try and combine a salicylate derivative, salicin, with the quinine mixture. The result has never yet disappointed me in any case of sepsis, *providing free drainage of pus has been provided for*. The last case in which I tried it successfully was one of puerperal fever following severe flooding, with uterine fibroids. Surgical opinion was against hysterectomy, there being septic metritis, with rigors, collapse, and high temperature. After three days the temperature settled down, although profuse discharge was still coming away. The patient eventually got well, and some months later a surgeon successfully removed the fibroids. I have had a similar experience with this treatment in septic miscarriages and in septicaemia with poisoned wounds, or from any septic focus, and should advise a trial of it in any septic state. The prescription I find most useful is:

℞	Quinine sulph.	gr. xij
	Acid. nit. hyd. dil.	♏ xij
	Potass. cit.	gr. xxj
	Tr. camph. co.	♏ xx
	Tr. scillae	♏ iij
	Salicin	gr. xij
	Aq. chlorof.	ʒ ij
	Aq.	ad ʒ vi

Sig. ʒ ss four-hourly, p.c.

In the puerperal case I added 10 minims of succus taraxaci and a half grain of potassium iodide per dose. If in an ordinary way the above mixture is found pharmaceutically inelegant, a variation of it is as follows:

℞	Quinine sulph.	gr. vj
	Acid. phos. dil.	♏ vj
	Liq. cocci	♏ x
	Potass. cit.	gr. xxj
	Liq. strych. hyd.	♏ xx
	Salicin	gr. xij
	Tr. scillae	♏ xxj
	Aq. chlorof.	ʒ ij
	Aq.	ad ʒ vj

Sig. ʒ ss four-hourly, p.c.

With both prescriptions I find aspirin, 2½ to 5 grains, a useful adjunct.

Emil Behnke

Miss K. EMIL-BEHNKE (39, Earl's Court Square, S.W.) writes: I am writing a life of my parents, Emil and Kate Behnke, whose research into vocal physiology and subsequent work in the scientific training of the voice, and the treatment of defects of speech, met with such cordial appreciation from members of the medical profession, amongst whom they counted so many warm friends. If any of these should have in their possession letters or information which they would allow me to incorporate in the biography I should be grateful for the loan of them. Every care would be taken of them and they would be returned in due course to the owners.

Sutures on Eyeless Needles

The special sterile sutures on 11/16 circle atraumatic eyeless needles with flattened shanks, referred to last week by Mr. Denis Browne in "An Orthopaedic Operation for Cleft Palate" (p. 1093), were manufactured in the London laboratories of Armour and Company, Ltd., St. Martins-le-Grand, E.C.1. They are designed primarily for use in a needle-holder in cramped abdominal operations, but are also large enough to be held comfortably in the fingers.

Diaries and Calendars

Messrs. John Walker and Co., Ltd. (Farringdon House, Warwick Lane, E.C.4), have sent us an attractive boxful of diaries (both tablet and pocket varieties), calendars, and appointment books for 1936. The outfit of a busy medical man is not complete without a diary of some kind, and John Walker's selection should appeal to a wide range of tastes. The prices vary from 1s. upwards.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 52, 53, 54, 55, 58, and 59 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 276.